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ABSTRACT

This study evaluates the impact of the first year of "Sesame Street" on preschool televiewing audiences in five sites (Boston, Mass., Durham, N.C., Phoenix, Ariz., suburban Philadelphia, and northeastern California). Chapter I introduces evaluational questions and the research strategy. Chapter II presents sampling procedures for pretest and posttest data on 943 children, explains criteria for development and selection of measurement instruments assessing children's learning, program content, parent and teacher attitudes, and describes field operations. Chapter III analyzes results in three parts: (1) a descriptive analysis of the viewing population (age, sex, advantaged children, Spanish-speaking children, rural children, and disadvantaged at-home and in-school viewers), (2) a probing analysis investigating in depth the characteristics of at-home, disadvantaged, high-viewing children in relation to home background and high or low learning, (3) an inferential analysis examining the overall effectiveness of the television series in achieving its goals. Chapter IV presents the summary, conclusions and recommendations. Extensive appendixes include detailed information on "Sesame Street" goals and evaluation instruments. (WY)

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THE FIRST YEAR OF SESAME STREET: AN EVALUATION

Volume III of V Volumes

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A report to the Children's Television Workshop

Educational Testing Service
Princeton, New Jersey
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Preface

Television is potentially a major factor in the lives of most Americans. Its actual impact is debatable. This is because almost all we have to evaluate television's impact is a large number of opinions, usually without supporting evidence. Presumably, in the past, unsupported opinion has been sufficient basis upon which to make policy decisions. Unfortunately, opinions vary as the following quotations indicate.

> "As a disease, memory is not malignant and in many people it is clearly benign. A severe attack, however, can lead to hypertension, insomnia, micturition and panic.... Risk in high exposure areas such as classrooms, libraries, and lecture halls appears to be relatively low, judging by the amount of infection for the number of hours of exposure. Nonetheless, persons who are vulnerable should avoid such places, but may attend political rallies, engage in sports, or watch television without hazard."
>
> Phillips, M. Ian, Is Memory a Disease?, Worm Runners Digest, Vol. 11, No. 1.
>
> "Television runs a game, I mean runs it on us all...each and evvy one you know. And unless you're one of those cases who never sits slumped and lifeless before that chilled and chilling gray eye, the number is being run on you, too.... Worry about it? Naw. No chance.... So who do you worry for? (Got to worry for somebody.) How about the kids? Cool, that's a good move; worry for the kids."
>
> Clayton Riley, The New York Times, February 8, 1970.
>
> "'I'll shoot you dead! Bang, bang!' shrieks Mommy's little darling, aged 3, aiming his imaginary gun. That sort of upsets Mommy.... She may be aware that somebody named Eisenhower...issued an ominous report...which stated that 'Television enters powerfully into the learning process of children.... Violence on television encourages violent forms of behavior.'"
>
> Beatrice Berg, The New York Times, November 9, 1969.
>
> "There are, no doubt, numerous items around your house such as basic art supplies, that will provide hours of exciting and creative play. And when you help your youngster learn how to use these materials you will be fostering his own inborn creativity, not to mention taking him away from the television set."
>
> Ellen Kort, American Baby, June, 1969.

> "One has only to listen to a child singing a television jingle...to realize that 'the tube' is teaching him something.... The medium is there; it is only the message which needs changing."
>
> Television for Preschool Children. A Proposal, Children's Television Workshop, February 19, 1968. p6.

The report that follows is an evaluation of the impact of a nationally telecast show on a relatively small but important segment of our society -- 3- through 5-year-old children. It is to be hoped that this study, unprecedented in scope, will soon have many parallels and will be useful in improving television programming.

Acknowledgments

One of the problems of viewing the annual televised presentations of the Motion Picture Academy Awards is that there are so many awards. The viewer is liable to get bored and tune in to another channel. But one of the rewards of staying tuned in is that an excellent understanding can be obtained of the myriad people who are needed to provide necessary technical and artistic support for a motion picture.

On a different plane, but in a similar manner, there is a danger that all the acknowledgments here might bore the reader. However, a little perseverance will insure an understanding of the extent of the subsurface support for this evaluation.

It is not only out of respect for copyright laws and the Motion Picture Academy that the awards to be presented here will not be called Oscars. For those who know Sesame Street, the name Oscar connotes grouchiness, and that is an inappropriate emotion to arouse on these pages. What is needed is a name that conjures a spirit of friendliness and appreciation. Instead of Oscars we have chosen Ernies (we know Bert won't mind), but to indicate that these awards are thoroughly deserved we have modified the spelling. Thus, for our purposes, Ernie is renamed Earnie. Earnies for outstanding field work in coordinating, testing, and observing in our major sites:

Mrs. Mary Adams for her performance in our Boston TV Party.

Mrs. Ellen Landau of Beaver College, Glenside, Pa. for her performance in our Suburban Philadelphia Story.

Mrs. Anne Borders-Patterson who, for our purposes, proved finer than Dinah in the State of Carolina, - specifically Durham, North Carolina

Reverend G. Benjamin Brooks who was responsible for insuring that our Phoenix sons (and daughters) rose to the occasion.

Earnies for cooperation in providing data that have added extra dimensions to our evaluation:

Mrs. Sara Haydon of Oroville, California who showed that Horace Greeley's advice, "Go west, young man, go west," was still timely, even for male researchers of a more mature age.

Miss Suzanne Settle of Channel KERA TV 13, Dallas, Texas, who helped us find out if preschoolers knew their ABC's in Big D.

Earnies to educators, administrators, and parents for facilitating our work in Head Start and Nursery School centers:

Mr. John Schaute, Mrs. Thelma Peters, and Mrs. Jo Crown in Boston.

Mrs. Stanley Heath, Mrs. Robert Rendon, and Mrs. Gilford Myers in suburban Philadelphia.

Mrs. Ruth Johnson of Durham and the more than 30 teachers and school administrators who cooperated so splendidly in each of our viewing areas.

Earnies to Mrs. Joan Cooney, President, Dr. Edward Palmer, Vice President and Mrs. Barbara Reeves, Associate Director of Research, of Children's Television Workshop. But for Mrs. Cooney there would have been no first year of Sesame Street. Dr. Palmer and Mrs. Reeves ensured that this evaluation proceeded smoothly and with the full cooperation of the CTW staff.

Earnies to the ETS data processing staff -- particularly Mr. John J. Ferris, Mrs. Alice Gerb, Mrs. Katherine Kornhauser, and Dr. Charles Hall.

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Channel 4	Chapel Hill, N.C., and to Mr. Robert Miss
Channel 12	Philadelphia, Pa., and to Mr. Norman Marcus and Mr. Chuck Herbits
Channel 8	Phoenix, Ariz., and to Mr. Robert Ellis

Earnies to the CTW research advisory board -- Drs. Gerald Lesser, Jerome Kagan, Samuel Messick, James Coleman, and Francis Mechner. They cannot be blamed for any deficiencies of this study, but it would have been less elegant without their help.

A giant Earnie to Miss Adele Lechowicz but for whose typing this report would not now be being read.

An Earnie to Miss Scarvia Anderson who saw the need for the evaluation long before Sesame Street was incorporated in downtown Education.

Finally, great, big, fat Earnies to my colleagues at ETS who made my work so pleasurable. Mrs. Gita Wilder wrote the observation and summary sections of the report since joining the project staff for the second year evaluation. And then there were those who have worked with me since earlier times. Their names appear on the title page. Look again as I give thanks to Reid, Randy and Sandi and to my co-author, Gerry.

Samuel Ball

Educational Testing Service

Princeton, N. J., October, 1970

CHAPTER I. INTRODUCTION

A. The Beginnings of the Sesame Street Evaluation

In the United States today there are more than 12 million children aged 3 through 5. Over four-fifths of the 3- and 4-year olds and a quarter of the 5-year olds do not attend any form of school. From the viewpoint of both the federal government and the National Education Association, the need to increase the availability of preschool experiences is critically important. The federal government has, therefore, attempted to provide preschool for the economically disadvantaged through Head Start. The National Education Association has argued, through its Educational Policies Commission, that "all children should have the opportunity to go to school at public expense beginning at the age of four." To implement that suggestion would involve providing teachers and facilities for over four million children at an annual cost, excluding capital expenditure, of $2.75 billion. (Time, June, 1966).

Even assuming the money were available, it would take many years to achieve the goal of universal education for 3-, 4-, and 5-year-old children. Thus, most children in that age grouping will continue to be excluded from preschool. In an attempt to provide a partial, relatively inexpensive, and speedy antidote, a consortium of public and private agencies[1] established Children's Television Workshop (CTW). The broad goal for CTW was to develop and telecast a daily, hour-long television show for preschool-aged children that would both entertain them and foster their intellectual and cultural development.

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[1] The agencies originally included the Carnegie Corporation, the Ford Foundation, the U.S. Office of Education, the U.S. Office of Economic Opportunity, and the National Institute of Child Health and Human Development. These were later expanded to include several other government and private agencies such as the Corporation for Public Broadcasting, the National Foundation of Arts and Humanities, and the Markle Foundation.

Why a television show? First, almost every home in the United States has an operating television set, and preschool-aged children are its most faithful viewers (on the average, children under 6 watch television about 25 percent more than adults). Second, there is little doubt that children learn something from television. Advertising agencies realize this by directing televised messages to children at appropriate times. Parents realize it as they hear their children sing commercial jingles, and teachers realize it when pupils are able to recognize words like "Kangaroo" and "Bosco" before they recognize some of the words in their basal readers. In short, television is potentially a highly important educational medium.

The third step in the reasoning behind the establishment of CTW was that existing shows for 3- through 5-year-old children either do not have education as a primary goal or may not reach important segments of the target population. Therefore, CTW was established with education as its primary goal. It was also charged with exploiting television's entertainment potential to hold the attention of children of all major socioeconomic backgrounds. The approximate cost of over a year's development and research and six months' programming was estimated at $8 million. The greatest part of the cost was for production of the show.

In the summer of 1968, CTW began to develop its television program, which later was given the title Sesame Street. From the outset, the need for extensive research was recognized. It was thought essential that a research group should be set up within CTW mainly to assist in the development of the programming. This research group was put in charge of formative research. Its work was to include coordinating of inputs and then writing the instructional goals of CTW; informing production staff of the needs, interests, and abilities of the target population; trying out specific materials as they were produced; and reporting on their impact with samples of 4-year-old children.

A second related need was to develop a means to assess the overall impact of Sesame Street when it finally was put together and televised (the summative evaluation). In the earliest stages of program development, CTW contracted with Educational Testing Service (ETS) -- an independent educational research and measurement organization -- to design and conduct the summative evaluation of Sesame Street. Specifically, ETS was given the responsibility of assessing and evaluating the impact of Sesame Street on 3- through 5-year-old children.

The evaluational study thereby commissioned was unusual in a number of ways. First, the show to be evaluated was itself unique. It combined attention-holding techniques (fast movement, variety, humor, slapstick, and animation) with a carefully planned educational program. Television critics in big city and small town newspapers and journals almost universally acclaimed Sesame Street and acknowledged that it broke new ground.

For example:

> "Sesame Street, as everybody knows is an amazingly popular children's variety show appearing on educational television. Judged by the standards of most other programs for preschoolers, it is imaginative, tasteful, and witty."
> Sedulus, The New Republic, June 6, 1970.

Saturday Review Television Awards:
"To Sesame Street. For the successful illustration of the principle that a major allocation of financial resources, educational research and creative talent can produce a widely viewed and popular series of regular programs for preschool children with an immediate pay-off in cognitive learning...."
Saturday Review, April 11, 1970.

"Sesame Street, ...is in the vanguard of a television revolution. In a television season laden with mediocrity the series has been the one new creative jump, the show for the history books."
Norman Mark, Sunday Times Advertiser, Trenton, March 22, 1970.

"I can't think of another television series that has had the consummate success of the children's entry, Sesame Street - from critical notices to popular acceptance to word-of-mouth praise."
Rick Du Brow, Hollywood, U.P.I. in Bucks County Times, February 12, 1970.

"If the current television season has produced one undisputed hit, it is Sesame Street...."
Jack Gould, The New York Times, December 10, 1969.

"The zooming popularity of Sesame Street has created a sensation in U.S. television."
E. M. Wylie, Reader's Digest, May, 1970.

Second, while there have been many studies of the effects of educational television, almost all these studies have been with high school or college students. Thus, a study involving preschool-aged children had virtually no accumulation of previous research as a base from which to explore.

Third, almost all studies of nationally televised shows have had as their focus the demography of the viewer rather than the amount learned by the viewer. If the focus of the study were on the learning of the viewer, the study almost certainly took place in an educational institution using closed circuit television under conditions whereby both viewer and nonviewer could be carefully observed. While such studies undoubtedly confer benefits to school systems and to colleges, their generalizability to the effects of watching nationally televised programs is meager. Therefore, this study posed special problems because it was evaluating a unique television show, nationally televised to a target population of preschool-aged children.

The evaluation began soon after CTW was itself established. In June, 1968, when CTW consisted of a small nucleus of administrative, production, and clerical staff, the first planning seminar for Sesame Street was conducted in Cambridge, Massachusetts. Participants included experts in child development, television production, preschool education, and children's literature. In all, five seminars were conducted during that summer, each focusing on a particular content area -- problem solving, language and reading, number, perception, and the affective-motivational domain. The principal evaluator from ETS was also present. The evaluator's role at those seminars included helping establish a consensus on behavioral goals, which later formed the basis of the Goals Statement for first year's production of Sesame Street. This Goals Statement, prepared by the research staff of CTW, is presented as Appendix A.

Once the goals of Sesame Street had been established, the instruments intended to measure the learning of the viewer could be developed. Measurement development took place between the summer of 1968 and the summer of 1969 and included development of instruments to measure the children's progress in the goal areas, the degree to which the children watched Sesame Street, the children's reactions to the various segments of the show, the children's home backgrounds, the content of the show,

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and opinions of teachers and parents whose children were involved in the evaluation.

The need for this variety of measuring instruments becomes obvious as one considers the scope of the evaluation. So, in the interest of rational progression, that is what will next be considered.

B. Evaluational Questions and Research Strategy

The questions that the evaluation attempted to answer were many. The overriding questions were:

1. Do 3- through 5-year-old children who view Sesame Street at home or in classrooms learn more[1] than comparable children who do not view the show?
2. Of those children who watch the show, what characterizes the children who learn most and least from the show?
3. Is the show effective among various subgroups of 3- through 5-year-old children -- for example, boys and girls, lower and middle class children, heavy and light viewers, high and low achieving children?
4. Inasmuch as Sesame Street adopted a magazine-style format, what elements in the show seemed to be most effective in terms of attention holding and amount learned?

That is, the major strategy was not merely to discover whether viewers learned more than nonviewers (though this was an important goal in light of the previous state of empirically based knowledge of the effects of television on preschool-aged children). The evaluation was also directed toward discovering which groups of children seem to benefit from viewing the show, what characterizes those who learn a great deal, how children react to various techniques used in the show, and whether the children's reactions seem to be related to their learning.

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[1] Learning was measured primarily in terms of the specific goals of the show, but transfer effects and side effects were also examined. (See the section on measuring instruments for detailed description.)

It was initially decided that the effects of viewing the show in two major settings would be studied. The first setting was the child in his own home. That was where the greatest evaluation effort was made, because this was the child in greatest need of preschool education -- the child most in mind when CTW was established. The second setting was the child in a preschool classroom -- for example, Head Start or Nursery School. Many preschool teachers feel a special need for a variety of teaching approaches and a show such as Sesame Street could have special appeal for them. Therefore, in each site except the rural site, classrooms were selected and then randomly allocated to viewing or nonviewing conditions.

There was also initial consideration of the effects of viewing the show in a third setting -- in "ad hoc" viewing groups in ghetto areas. These specially set-up small groups of children watching TV at home were to have been established by CTW with the subsequent evaluation carried out by ETS. Failure to establish the groups was apparently due to a large number of overlapping reasons. For example, most mothers would not make any long-range commitment to have other children in their homes at least once a week. Many mothers were unwilling to have their children go to other people's homes on a regular basis. It was apparently difficult to get mothers to agree to serve a leadership role in setting up the groups, especially in high-density housing areas. There was little understanding, especially in the days before Sesame Street began televising, of the value of the show. Further study of this problem is being conducted by CTW.

A summary of the general design of the study is presented in Table 1. The groupings described there were basic to the sampling procedure. Not all groupings were represented in each of the sites and this fact will be further clarified in the next chapter.

So much for a brief presentation and description of the overriding questions and the research strategy. Some important initial measurement problems remain to be considered.

In order to answer the four questions presented at the beginning of this section, a number of interrelated processes concerned with measurement had to be begun. First, the show itself had to be prepared. That is, the goals of the show had to be translated by the producers into specific program segments, because without knowing something about the show as planned it would be difficult to translate the goals into measuring instruments. In theory, this process is naively thought of as being like a relay race down a one-way street in which goals established by seminars are passed on to producers who run their race before passing their translations of the goals on to the measurers. In practice, however, it was far more complex. It resembled the traffic patterns of the bumper cars in an amusement park, inasmuch as there were points of confusion and of unexpected contact. Thus, as well as the usual process of goals channeling production, and then goals plus production fathering the

TABLE 1

Major Groupings used in the evaluational study of Sesame Street. Males and females are represented in each group.

- At home
  - 3 years old, low SES
    - (encouraged, observed)
    - (not encouraged, not observed)
  - 4 years old, low & middle SES, including rural children
    - (encouraged, observed)
      - Spanish-speaking
      - English-speaking
    - (encouraged, not observed)
    - (not encouraged, not observed)
      - Spanish-speaking
      - English-speaking
  - 5 years old, low SES
    - (encouraged, observed)
    - (not encouraged, not observed)
- At preschool
  - 3 years old, low SES
    - (encouraged, observed)
    - (not encouraged, not observed)
  - 4 years old, low & middle SES
    - (encouraged, observed)
      - Spanish-speaking
      - English-speaking
    - (encouraged, not observed)
    - (not encouraged, not observed)
      - Spanish-speaking
      - English-speaking
  - 5 years old, low SES
    - (encouraged, observed)
    - (not encouraged, not observed)

Some Definitions:

Age -- Children born between
Feb. 1, 1966-Jan. 31, 1967 classified as 3 years old
Feb. 1, 1965-Jan. 31, 1966 classified as 4 years old
Feb. 1, 1964-Jan. 31, 1965 classified as 5 years old
That is, at the time the show begins, children classified as
3 years old ranged from 2 years 9 months to 3 years 8 months
4 years old ranged from 3 years 9 months to 4 years 8 months
5 years old ranged from 4 years 9 months to 5 years 8 months
Therefore mean age at start of the show for
3 years old = 3 1/4 years of age
4 years old = 4 1/4 years of age
5 years old = 5 1/4 years of age
Thus when the show was half way through (Feb. 1970) children categorized as four years old ranged from 4.0-4.11 and averaged 4.6.
The question might be raised as to why this classification system was necessary--e.g., why not use minimum age of school entrance as a cut-off point. Unfortunately minimum age of school entry differs markedly from school district to school district. A standard definition was felt to be quite worthwhile and the one adopted above allows clear interpretations to be made.

Encouraged -- The parents of the at-home children in encouraged conditions were told about the show and asked to cooperate by turning the show on each morning. The teachers of the encouraged in-school children were given TV sets for each of their classrooms. The teachers agreed to have their classes view Sesame Street at least three times a week. If these agreements were being broken, further encouragements were applied--for example, CTW promotional material.

Observed -- The children in this grouping were visited for half an hour once each week. Their reactions to various segments of the show were systematically recorded.

Low and middle SES -- This variable is defined in Chapter II under the heading, Pretest Parent Questionnaires.

NOTE: All the terms used in this table are further elaborated in the text of Chapters I and II of this report. All children are from English speaking backgrounds unless specifically referenced otherwise.

measures, there were also instances of production staff being intrigued by a measuring technique and adapting the technique to the television show, and goals being operationalized in terms of a measurement question. Inasmuch as a basic question for all was what changes in the children's behaviors do we want to affect, this interchange among goals, production, and measurement was both natural and desirable.

Another problem that had to be solved was the choosing of a sample that was representative of the children whose reactions CTW wanted to study. Both these problems -- the selection of the sample and the development of the measuring instruments -- need to be considered in considerable detail in order that the research design can be understood. The first two sections of the following chapter will be dedicated to that task.

CHAPTER II. PREPARING FOR THE EVALUATION

A. Sampling Procedures

1. General Considerations:

The overall purpose of Sesame Street stated in the document that initiated the Children's Television Workshop (Television for Preschool Children: A Proposal. February 19, 1968) was "to reach and stimulate our preschool population" (p5). While "the problems and needs of disadvantaged children would be kept uppermost in mind during the planning and promotion of all programs", nonetheless, "the program is intended for all children" (p7).

A major concern in the sampling was that it would permit generalization to the populations of children of most interest to CTW. The population considered most important consisted of 3- to 5-year-old disadvantaged children (with emphasis on 4-year-olds) living in ghetto-type, inner-city areas in various parts of the country. This population included both black and white children.

CTW was also interested in knowing the effects of Sesame Street on other groups of 4-year-old children: advantaged suburban children; advantaged and disadvantaged rural children; and disadvantaged, Spanish-speaking children.

It is true that CTW would have liked to have studied other populations of preschool children (for example, American Indian children, educable mentally retarded children, and deaf children), but cost prevented this during the evaluation of the first year of the show.[1] There had to be a limit to the variety of populations sampled. In order of actual sample size, the major populations sampled were:

Population 1. Disadvantaged children from inner-city areas.
Population 2. Advantaged children from suburban areas.
Population 3. Advantaged and disadvantaged children from a rural background.
Population 4. Disadvantaged Spanish-speaking children.

2. Site Selection:

The first criterion for site selection was that the area be served by a VHF rather than UHF educational television station. This was to ensure adequate television reception conditions, since many TV sets, especially in poverty areas, do not receive UHF stations. In the days before *Sesame Street* was first telecast, there was also doubt as to whether many children would watch the show. Keeping to VHF areas would enhance the prospect of obtaining sufficient viewers in the study. A second criterion for site selection was that the station agree to telecast *Sesame Street* at either 9 a.m. or 10 a.m. daily. These times were judged by CTW to be the most desirable because then the preschool-aged child is most likely to be in control of the television set and because his ability to learn is probably optimal at about that time. A third criterion was that the study site contain a sizeable number of children of primary interest to CTW.

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[1] It is hoped that educable mentally retarded children will be studied in the evaluation of the second year of *Sesame Street*.

The number of large cities that met all three criteria was relatively small. Many have only a UHF ETV station -- for example, Los Angeles, Cleveland, and Washington, D. C. Many cities have ETV stations that were unable to program Sesame Street during the preferred morning hour -- for example, New York (though a commercial channel, at a late stage, provided time at 9 a.m.) and virtually all the west coast area. And many cities that had a VHF ETV station and progammed the show at an appropriate time did not have large ghetto groups.

For those that did meet the initial three criteria, new considerations emerged. Could community approval and cooperation be obtained for this evaluation project? Could competent field staff, acceptable to the community, be hired? These were clearly important considerations in the selection of the sites.

The sites chosen were Boston, Massachusetts; Durham, North Carolina; Phoenix, Arizona; suburban Philadelphia; and northeastern California.

Boston is a city in the northeast containing a number of well-defined ghetto areas. The local community has a nationally recognized reputation for being well organized. It contains areas that have a predominately low-income black population and areas with a large population of low-income whites.

Philadelphia, also in the northeast, is surrounded by a number of well-defined middle-class suburban areas. It is close to ETS, thereby allowing ETS personnel responsible for the evaluation to become aware of procedural problems by direct experience.

Durham, North Carolina, was selected as the site for evaluation in the south. It met all the initial criteria, and it is also where the ETS Southeastern Office is located, again allowing ready access to experienced supervisory personnel.

Phoenix was chosen as a western city containing racially- and ethnically-mixed lower SES communities. Of special interest was the availability of Spanish-speaking subjects there.

Northeastern California was chosen as the site in which rural children would be sampled because it contains lower SES rural children and because this 10-county area was able to donate professional testing time and provide supervisory personnel.

Obtaining local community cooperation to work in these five sites involved five different processes. In the Philadelphia suburban area in which we worked, there was virtually no local community organization that was unduly concerned by our research activities. It was simply sufficient to inform the local police of our impending enumeration activities. In Boston, Durham, and Phoenix, there was a need to discuss with community leaders what the ETS evaluation of Sesame Street was attempting to do and what its effects on their communities would be. In general, the discussions were productive and amicable. In less militant areas, factors which facilitated this were the relatively cohesive, hierarchic, and monolithic nature of the communities' structures, and the community-centered approach of the ETS field work. Once the major community leaders had expressed a wish to cooperate, the process "down the line" was smooth. For example, if the Head Start leaders were cooperative and the Head Start teachers and aides were cooperative, there was no trouble in the rest of the community. In the more militant areas, the approach remained the same but much greater follow-up at the local level was needed.

Major concerns of these communities were that the ETS tests be specific to the show rather than focusing upon "intelligence" or "aptitude," that their children not be compared invidiously with middle class, more advantaged children, and that people hired to conduct the evaluation be members of the local community. These concerns did not cause problems. It was pointed out that the evaluation was of the show and not of the children. That is, ETS was concerned with discovering whether the show achieved its goals with various groups of children. "Increasing intelligence" was not one of the goals, nor was there a need to compare viewers from various economic groups. Rather, the overall need was to compare viewers and nonviewers within each group. The concern over the use of local personnel also was easily settled because ETS regarded local personnel as an asset in insuring that children, especially in disadvantaged areas, responded optimally to the tests.

It must be emphasized that this first stage of sampling was not a random process. Thus, the sites chosen cannot be construed as being necessarily representative of specific geographic areas. Rather, they were chosen because they contained children who were of primary interest to CTW in its first year of telecasting -- namely lower SES, urban, black, and white children in the northeast, south, and west; middle SES children living in an eastern city; and lower SES children living in a rural area.

TABLE 2

Proposed sampled groups and sample sizes of subjects to be included in the evaluation of Sesame Street.

Region		Northeast		South	West	
Group (4 year olds unless specified)		Boston lower SES	Philadelphia middle SES	Durham lower SES	Phoenix lower SES	Northeast California rural
Home	E Obs	60 children	60 children	60 children	60 children	30 children
Home	E Not obs.	30 children	30 children	30 children	30 children	30 children
Home	O Not obs.	30 children	30 children	30 children	30 children	30 children
N.S.	E Obs	4 classes	4 classes	4 classes	4 classes	
N.S.	O Not obs.	4 classes	4 classes	4 classes	4 classes	
N.S.	E Not obs.	4 classes				
Home	3 yr. old E Obs	30 children	(Side Study #1 effects of age of viewer)			
Home	5 yr. old E Obs	30 children				
Home	3 yr. old O Not obs.	30 children				
Home	5 yr. old O Not obs.	30 children				
N.S.	3 yr. old E Obs	4 classes				
K.	5 yr. old E Obs	4 classes				
N.S.	3 yr. old O Not obs.	4 classes				
K.	5 yr. old O Not obs.	4 classes				
N.S.	E Obs Span.	[Side Study #2 effects of language in home (Spanish vs. English)]			4 classes	
N.S.	O Not obs. Span.				4 classes	

E	=	encouraged to view the show
Obs.	=	observed
O	=	not encouraged to view show
K	=	kindergarten
Span.	=	Spanish-speaking
N.S.	=	nursery school

NOTE:
1. This table is an elaboration of Table 1 (above).
2. Sample sizes represent expected number of subjects for whom all pretest data were to be obtained. Some attrition was expected by the time the posttests were given.

The number of children and classes obtained in each site is presented in Table 2.

3. Selection of Children:

The second and succeeding stages of the sampling were similar for Boston, Durham, and Phoenix. In each of these sites the areas showing greatest poverty were specified by local officials and by ETS field staff familiar with the area. "Neighborhoods" around Head Start Centers were then defined in these poverty areas.

At this point, permission was obtained from administrators of the requisite number of Head Start classes to investigate the effects of Sesame Street on disadvantaged children in their schools. The classes were then randomly allocated to viewing (encouraged) or nonviewing (not encouraged) conditions. Each class in the viewing category was given two black and white television sets.[1] Classes in the nonviewing category were not given television sets nor were any used in their classrooms during the period of the evaluation. It was generally understood that the teachers of the viewing classes would use the sets to have their pupils view Sesame Street but that the degree to which they did so, and the way Sesame Street was used in the classroom, was their prerogative. Data were subsequently collected to measure the amount each child viewed in the classroom and to discover how the teacher used the show (for example, whether or not she integrated it into the classroom curriculum, or used it as a supplement only).

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[1] These sets were portable, 19" sets retailing for about $110. Two sets were placed in each classroom to insure that crowding around a set, with consequent control and disturbance problems, would not occur. The plan was that after the evaluation was over, the second set could be placed in a nonviewing classroom.

There were three teachers who initially refused to cooperate. Two said they would cooperate only if they were made part of the viewing group and one said she would cooperate only if she were made part of the nonviewing group. These conditions were met and represent a mild flaw in the randomness of the classroom allocations.

Once the neighborhoods and cooperating schools had been selected, the next step was to obtain the at-home sample. Local street maps were obtained, and a house-by-house canvass of the areas surrounding the Head Start centers was begun. The areas covered were expanded until a sufficient number of eligible children had been found.

The approach used by the ETS field staff during this house-by-house canvassing was that ETS was conducting a survey of the effects of television on preschool children. It was not until children living on specific city blocks had been randomly assigned to viewing or nonviewing conditions that the children to be encouraged to watch the show were told about Sesame Street. The decision was made to assign children to viewing conditions by blocks rather than individually in order to overcome the danger of treatment contamination. This danger would have occurred if neighbors had been given different treatments and, therefore, had been given different reasons for the study.

The determination of who would be encouraged to view (experimental) and who would not be encouraged to view (control) was relatively simple in the classroom situation. Classes could not view Sesame Street without a television set.

Greater problems existed with the at-home children. The need was to have a random subset of children who would watch the show and a random subset who would not watch the show. The fear in the days before Sesame Street was that relatively few children would watch. After all, it was to be telecast on educational television channels -- a loose network not renowned for capturing large audiences. And the ETV following was clearly more middle class than lower class.[1]

Therefore, it was decided that two-thirds of the at-home children would be encouraged to watch the show and the other third would not be so encouraged. The encouraged group was told about Sesame Street, was given publicity material, and was paid a weekly half-hour visit by ETS-trained staff during the Sesame Street morning telecasting time. The control (not encouraged children) did not receive these treatments.

The use of indigenous personnel for all aspects of the field data collection, including sample selection, proved worthwhile. It is estimated that almost all eligible children in the specified areas were located, and the subsequent cooperation rate was 97 percent.

The suburban Philadelphia sample of classrooms was chosen using the same basic process. However, a problem occurred in the obtaining of at-home children. Door by door canvassing proved to be extremely time consuming in relation to the number of eligible children found. This was in part due to the fact that suburban middle class housing is not high density, that there is a relatively low proportion of preschool children in the middle class population, and that a relatively high proportion of 4-year-old middle class children are attending nursery school. When it became obvious that the house-by-house survey would not produce a sufficient number of at-home children in the time allotted, an expedient was added: parents of preschoolers who agreed to cooperate were asked to name other children in their suburban area who did not attend nursery school. Despite this procedural change, the evidence to be presented later indicates that the ETS middle class suburban sample is reasonably representative of many other suburban groups.

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[1] This problem was a major reason for confining the study sites to areas which had strong ETV stations -- strong both in terms of signal and broadbased community support.

The California rural sample was obtained through the good offices of Mrs. Sara Haydon, Assistant Director, Pre-primary Component, Northern California Elementary Schools Project, Oroville, California. Independently of ETS, Mrs. Haydon had decided to feature Sesame Street as a teaching medium in her 10-county area. Then, working cooperatively with ETS, she devised an evaluation plan. She asked the 10 school superintendents to nominate from their rural areas preschool children from poor families.

It can be seen from the pretest results, to be presented later, that the group of children thereby obtained was, on the whole, educationally deprived. There is no doubt that the children came from a rural background. It took several days to travel throughout this study site, and most of the children lived in areas where the largest town in hours of driving had a population of but a few hundred people.

TABLE 3

Descriptive Categorization of the Children for Whom Complete and Acceptable Pretest Data Were Obtained.*

	Total N=1124	Boston N=402	Philadelphia N=177	Durham N=218	Phoenix N=262	California N=65
	%	%	%	%	%	%
Sex:						
Male	50.8	49.3	53.1	52.8	51.2	46.2
Female	49.2	50.8	46.9	47.3	48.9	53.9
Location:						
At home	54.2	40.1	59.9	74.8	44.3	96.9
In school	45.8	60.0	40.1	25.2	55.7	3.1
Predominant Language spoken in home:						
English	93.8	97.8	100.0	98.7	78.6	96.9
Spanish	5.3	1.5	0	0	19.5	3.1
Viewing status:						
Encouraged	62.5	54.5	67.8	75.2	59.2	69.2
Not encouraged	36.7	43.3	32.2	24.8	40.8	30.8
Observation status:						
Observed	48.4	51.5	53.7	53.7	47.3	0
Not observed	51.6	48.2	46.3	46.3	52.7	100.0
Observation Status of the 63.1% who were Encouraged:						
Observed in school	23.0	28.1	23.2	16.5	26.0	0
Observed in homes	24.4	20.2	30.2	37.6	21.8	0
Not observed in school	0.4	1.2	0	0	0	0
Not observed in homes	14.8	5.0	14.1	21.1	11.5	68.2
Population Group:						
Black	52.4	63.4	2.8	84.9	55.0	0
Spanish	7.2	1.5	0	0	27.5	4.6
White	40.0	35.1	96.6	15.1	17.6	90.8
Age in Months:						
34	0.2	.5	0	0	0	0
35	0.6	1.0	0	1.4	0	0
36	0.7	2.0	0	0	0	0

*155 pretests were rejected during the initial quality control

TABLE 3 (continued)
Descriptive Categorization of the Children for Whom Complete and Acceptable Pretest Data Were Obtained.*

Age in Months:	Total N=1124	Boston N=402	Philadelphia N=177	Durham N=218	Phoenix N=262	California N=65
	%	%	%	%	%	%
37	0.8	1.2	0.6	3.8	0	0
38	0.5	1.5	0	0	0	0
39	2.1	4.5	0	2.8	0	0
40	1.2	2.7	0	.9	0	0
41	.9	1.2	.6	1.8	0	0
42	1.4	3.0	0	.9	.8	0
43	1.2	2.0	0	1.4	0	3.1
44	2.7	3.7	1.7	1.8	2.7	1.5
45	2.8	3.2	5.7	1.8	1.5	0
46	3.2	1.7	4.0	4.6	3.8	3.1
47	4.0	4.0	4.0	3.7	5.0	1.5
48	5.6	5.0	6.8	5.1	5.7	7.7
49	5.9	5.0	6.8	4.6	8.0	4.6
50	5.0	3.2	7.9	3.7	7.6	1.5
51	6.9	3.5	9.0	5.1	11.1	10.8
52	5.6	4.2	6.2	6.9	7.3	1.5
53	6.2	3.2	7.3	6.0	8.0	15.4
54	5.4	2.2	10.2	4.6	6.1	12.3
55	5.3	2.2	6.8	7.8	6.9	6.2
56	5.2	3.5	10.2	4.6	4.2	7.7
57	6.1	4.0	5.7	6.0	9.9	4.6
58	5.1	3.7	4.5	5.1	7.3	6.2
59	2.7	3.7	.6	2.3	2.3	4.6
60	3.1	3.5	.6	6.9	1.2	3.1
61	2.1	4.0	0	2.3	.8	0
62	1.5	4.0	0	.5	0	0
63	1.1	2.7	0	.5	0	0
64	1.0	1.5	.6	1.8	0	0
65	1.0	2.0	.6	.5	0	1.5
66	.3	.3	0	.5	0	1.5
67	.4	.8	0	.9	0	0
68	.5	1.2	0	.5	0	0
69	.6	1.2	0	.9	0	0

*155 pretests were rejected during the initial quality control

These, then, were our five study sites, and these were the ways we chose our sample and assigned them to the conditions of the study. Table 3 indicates the demographic characteristics of 1,124 children who were pretested and whose pretest data were deemed acceptable after rigorous quality control procedures were used (155 pretests were rejected).[1] It can be seen from this table that the basic expectations of the sample were met. Thus, for example, there was a very slight preponderance of boys, and there was a majority of at-home children, of lower class black children, and of 4-year-olds.

B. Measuring Instruments

1. General Considerations:

For the evaluation of Sesame Street to be properly conducted, a large number of variables had to be measured. This, in turn, meant that a variety of measuring instruments had to be developed. Unfortunately, there were few relevant, previously developed measures available for possible adoption or adaptation in this project. We were, after all, working with preschool children mainly in ghetto communities, with testers necessarily unsophisticated in testing. We also had the problem of measuring such variables as the amount of viewing by the children (a variable that Neilsen has found, over the years, to be difficult to measure even with middle class adults), and of obtaining background information on the children's homes and families (a sensitive operation especially exacerbated in ghetto areas in recent years by a proliferation of social science research without a concomitant proliferation of immediately obvious beneficial results from that research).

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[1] The data control procedures, including quality control, are presented later in Chapter II.

2. Pretests of the Children:

One of the most difficult measurement problems is presented when the subjects to be tested are preschoolers. The traditional testing approach (for example, Stanford Binet Intelligence Test, Hess and Shipman Eight Block Sorting Task, Caldwell Cooperative Preschool Inventory) has been to set up an adult tester-child subject relationship. Then toys, puzzles, and games are used as stimuli, and the tester makes judgments about the appropriateness of the child's responses. Most such individual tests demand considerable training on the part of the tester. Often the verbal responses of the child require meticulous care in classifying (is it a 2 response or a 1 response?). And often it is not clear what the child intends by his behavior (is he intending to make the toy airplane fly over the tester's conveniently placed hand or is the child simply zooming the plane all around and happens to include zooming over the tester's hand?) This traditional approach to testing preschoolers, though costly and cumbersome, may provide important clinical insights into a child's behavior. But it also provides scores with reliabilities usually lower than would be acceptable for tests of older children. Nonetheless, with a trained staff, small numbers of children, and a laboratory-type setting, the traditional approach to testing is a useful one.

The evaluation of Sesame Street necessitated working with relatively untrained testers, with large numbers of children, and in makeshift circumstances, such as on kitchen tables in private homes and in unused parts of schoolrooms. It was felt that the most valid test behavior would be obtained from preschool-aged children if they were tested in a familiar environment. However, while this meant a minimum of extra anxiety for the child, it certainly increased the difficulty for the tester and precluded elaborate testing materials. The testing of large numbers of children had to be conducted relatively quickly. A great number of items covering a wide range of goal areas was also required, without placing improper demands upon the child's time and powers of attention.

The general technique of measurement that was adopted involved three basic steps. First, a graphic representation was presented to the child (one or more drawings of objects or events). Then the representation was described to the child ("Here is a bear, here is a bear, and here is a bear."). Finally, the child was asked to respond, usually by pointing. ("Show me the biggest bear.") This technique was used in various ways, but certain principles were retained. Since each picture was described for the child, his response was not dependent upon his own interpretation of the picture unless this interpretation was itself being studied.

Further, the child's response was not dependent upon his ability to verbalize unless the goal being assessed demanded verbalization as, for example, goal I.A.5: "Given a printed letter, the child can provide the verbal label." This is a most important point. It is most unfair to very young children, especially from disadvantaged backgrounds, to test understanding by requiring verbalization by the child. Thus, if you want to know whether a child can classify objects by shape, it is simply not good enough to present an orange and an apple and ask, "How are they alike?" Even if he can show his understanding of the problem (for example, he can select from an array of variously shaped objects, a tennis ball to go with the orange and apple), it would not necessarily mean he could verbalize why he had made the correct response.

The ETS test format was so developed that children were presented with a kaleidoscope of interesting pictures, and tasks related to the pictures, without the anxiety created by changing the conditions and rules of the testing game. Their answers, therefore, were not blocked by failures to understand what was required of them. (See Appendix B for a sample of test items.) Formats were kept simple, each test, its manual and its answer sheet were color-coded, and each set of answer sheets was permanently attached to a cover page containing basic demographic data on the child to be tested. Even minor details such as the naming of tests were carefully considered. Simple titles such as Letters Test, Puzzles Test, and Hidden Triangles Test were preferred to the more technical wording of Test of Symbolic Representation, Test of Problem Sensitivity, and Test of Field Dependence-Independence.

Therefore, the testers were able to concentrate on the child taking the test rather than on the mechanics of test administration.

All tests, except one, were subjected to a lengthy development procedure. As ideas were initiated, they were discussed, put into test form, and tried out on a small number of children. If there were no obvious problems, they were taken to consultants for potential refinement. A major step was a pretesting of the instruments by ETS and CTW staff during a July, 1969, try-out of a week's telecasting of Sesame Street in a realistic ghetto setting. Several problems were discovered in this try-out. For example, some subtests were too long and some items were negatively discriminating. The tests were extensively revised on such bases as these as well as on the experiences of the trained testers from ETS and CTW who combined their efforts during this phase of the test development. Finally, before having the tests printed for pretest administration, the battery was presented to a prestigious group of advisors in Cambridge, Massachusetts, for their final comments. These included Harvard professors Gerald Lesser, Jerome Kagan, and Sheldon White.

A major outcome of that meeting was that an additional test was added to the battery - the Puzzles Test. To that point, there had been little coverage of the problem-solving goal area. This was because there was no certainty as to which aspects of problem solving would receive attention in the show and which would be relatively neglected. However, advice was received at the final meeting before the pretest battery was printed that problem sensitivity would be a focus for the producers; so the Puzzles Test was quickly developed. It was not subjected to the same rigorous development procedures as the others.

At this point it is germane to discuss which tests were developed to assess what goal areas. The listing of the major goals of Sesame Street (see Appendix A) indicates that there were almost 70 specific goals being given attention by the producers. The test battery could not be expected to assess progress in every one of these areas for a number of reasons. First, reliable measures for each goal would require a battery of tests that would take too long to administer to preschool-aged children.

Second, even if a full series of tests covering all goals and assessing transfer learning could be administered in reasonable time, there was probably insufficient time to develop all these tests. Third, and perhaps most critically, there was, as was described in reference to the Puzzles Test, doubt in some goal areas as to how the producers of the show would operationally define the goal. In order to overcome this problem it was decided to expand the test battery at posttest time.

Table 4 indicates the tests and their subtests that were developed for and administered in the pretesting of the sample. Table 4 also indicates that a substantial number of the goals of Sesame Street were specifically assessed in the pretest battery. The table provides relevant data from the pretesting. It can be seen that there was little problem of ceiling effect. Reliabilities were generally very high, especially considering that in some subtests the children necessarily performed at about a chance level. That is, there was no expectation that children would know much at pretest time in some of the areas that Sesame Street was designed

TABLE 4

PRETEST SCORES FOR TOTAL GROUP

N = 1124

	Maximum Possible Score *	Mean	Standard Deviation	Cronbach Alpha Reliability
Grand Total	224	99.41	30.22	.96
Body Parts Total	42	30.34	7.44	.90
Pointing to Body Parts	10	8.30	1.79	.72
Naming Body Parts	20	14.30	3.44	.81
Function of Body Parts (Pointing Response)	8	5.31	2.27	.77
Function of Body Parts (Verbal Response)	4	2.42	1.53	.79
Letters Total	58	15.57	7.92	.89
Naming Capital Letters	16	1.90	3.53	.93
Naming Lower Case Letters	8	0.63	1.35	.78
Matching Letters in Words	4	3.12	1.14	.66
Recognizing Letters in Words	4	1.38	1.10	.36
Initial Sounds	4	1.05	0.94	.17
Reading Words	6	0.04	0.33	.78
Forms Total	20	10.01	3.79	.77
Recognizing Forms	4	2.11	1.23	.59
Naming Forms	4	1.25	1.22	.67
Numbers Total	54	16.89	8.91	.92
Recognizing Numbers	6	2.00	1.65	.62
Naming Numbers	15	2.04	3.45	.92
Numerosity	6	3.65	1.70	.71
Counting	9	5.17	2.57	.81
Addition and Subtraction	7	1.77	1.60	.67
Matching Subtest	11	8.68	2.29	.76
Relational Terms Total	19	10.81	3.30	.70
Amount Relationships	9	4.61	1.85	.58
Size Relationships	2	1.72	0.50	.17
Position Relationships	7	4.00	1.75	.56
Sorting Total	6	2.58	1.41	.35
Sorting by Number	2	0.83	0.78	.39
Sorting by Function	2	0.75	0.75	.39
Classification Total	24	12.22	4.66	.83
Classification by Size	2	1.18	0.75	.44
Classification by Forms	6	2.50	1.46	.57
Classification by Number	6	2.31	1.42	.53
Classification by Function	9	5.71	2.00	.67
Puzzles Total	5	2.22	1.38	.44
What's Wrong Here (Verbal Response)	5	1.78	1.50	.64
Peabody Raw Score	80	35.97	12.48	---
Peabody Mental Age (Months)	--	45.26	14.87	---

*Subscores do not necessarily add up to the total test score since some items were not included in any subscore.

to teach -- for example, naming letters. The Peabody Picture Vocabulary Test (PPVT) was included in order to assess the level of vocabulary and to compare this sample with other children. It should be noted that the PPVT is a standardized test and has been used in many previous educational studies.

The pretest battery took an average of about two hours to administer. Usually the tester worked with the child in three sessions, but the tester's judgment was a major factor in every case. Thus, if a child seemed to be alert and enjoying the testing experience he might have finished the test in two sessions. If rapport was difficult to establish, or if the child tired easily and was slow to respond, the tester was allowed to call on the child as many times as was needed to complete testing. Almost all children who were tested were completely tested. Only eight children could not be administered the complete pretest battery. A description of the tests and subtests and sample items are presented in Appendix B.

3. Posttests of the Children:

The same rationale and development procedures were employed for the posttests as were employed for the pretests. In order for gains by the children to be calculated, there had to be a large common core of items from pretest to posttest. Even so, some items on the pretest were eliminated from the posttest because experience from pretesting indicated this to be the best course. The Peabody Picture Vocabulary Test (PPVT) was not included in the posttest because the scores obtained at the pretest were to

TABLE 5

Posttest scores for total group

N=1017*

	Maximum Possible Score	Mean	Standard Deviation	Cronbach Alpha Reliability
Grand Total	235	143.77	41.07	.98
Total For Items Common to Pretest and Posttest	203	123.48	35.85	.98
Body Parts Total	32	25.46	5.39	.88
Pointing to Body Parts	5	4.22	1.05	.59
Naming Body Parts	15	11.16	2.73	.76
Function (Points)	8	6.77	1.62	.71
Function (Verbal)	4	3.30	1.16	.77
Letters Total	58	26.32	13.01	.96
Recognizing Letters	8	4.36	2.36	.75
Naming Capitals	16	6.61	6.07	.96
Naming Lower Case	8	2.30	2.67	.89
Matching Letters In Words	4	3.75	.66	.62
Recognizing Letters In Words	4	2.11	1.18	.41
Initial Sounds	4	1.08	.90	.22
Reading Words	6	.20	.61	.61
Forms Total	20	13.94	3.89	.82
Recognizing Forms	4	2.80	1.29	.74
Naming Forms	4	2.43	1.30	.66
Numbers Total	54	30.26	12.26	.95
Recognizing numbers	6	3.41	1.93	.74
Naming Numbers	15	5.47	5.17	.95
Numerosity	6	4.61	1.43	.68
Counting	9	6.80	2.06	.75
Addition and Subtraction	7	2.61	1.64	.65
Matching Subtest	11	9.92	1.49	.69
Relational Terms Total	17	11.70	2.70	.69
Amount Relationships	9	5.60	1.55	.53
Size Relationships	2	1.88	.36	.28
Position Relationships	5	3.59	1.25	.50
Sorting Total	6	3.70	1.52	.53
Classification Total	24	16.04	5.00	.87
Classification by Size	2	1.44	.70	.47
Classification by Form	6	3.59	1.58	.66
Classification by Number	6	3.17	1.68	.67
Classification by Function	9	7.25	1.83	.72
Puzzles Total	5	3.01	1.37	.50
Hidden Triangles Total	10	4.59	1.48	.28
Which Comes First Total	12	5.95	2.87	.70
Sesame Street Test Total	10	6.68	3.33	.89

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* The 1017 subjects include the 943 for whom all pretest data were available plus 74 who were also posttested.

be used as a moderator variable (Is vocabulary level associated with the amount learned?) and were not to be used as a dependent variable (Does Sesame Street affect vocabulary level?). An effort has been made purposely in this report to refrain from divulging I. Q. scores. This decision keeps faith with a promise that was made to community leaders.

New tests and subtests were added to the posttest and these are listed along with relevant data in Table 5. It can be seen from Table 5 that the characteristics of the posttests retained the desirable psychometric qualities as the pretest battery. These new tests were included to obtain a greater coverage of the problem-solving goal area (Which Comes First Test, Hidden Triangles Test) or to assess the child's knowledge of Sesame Street as a television program (Sesame Street Test). The latter test was used as only one part of the index to determine the amount of the child's viewing of Sesame Street. The questions on the test were simple questions. (For example, from a page with four photographs of Sesame Street characters, the child was asked to point to Bert and Ernie.) The argument was that viewers would, for the most part, do well on this test. It was virtually certain that nonviewers could not do well on the test.

The amount of time needed to administer the posttest battery was less than that needed to administer the pretest battery. Most testers reported that it took about one and a half hours. The children were, of course, six months older, were more accustomed to being tested, and, at least in some cases, were much more assured

TABLE 6

Intercorrelations of Selected Pretest (Below the Diagonal) and Posttest (Above the Diagonal) Scores

	1. Grand Total	2. Body Parts Total	3. Painting to Body Parts	4. Naming Body Parts	5. Body Parts Functions	6. Letters Total	7. Recognizing Letters	8. Naming Capitals	9. Naming Lower Case	10. Initial Sounds	11. Reading Words	12. Numbers Total	13. Recognizing Numbers	14. Naming Numbers	15. Numerosity	16. Counting	17. Adding and Subtracting	18. Matching	19. Forms Total	20. Recognizing Forms	21. Naming Forms	22. Relational Terms Total	23. Sorting Total	24. Classification Total	25. Puzzles Total	26. Peabody Raw Score	27. Peabody Mental Age	28. Hidden Triangles Total	29. Which Comes First Total	30. Sesame Street Test
1.	1.00	.77	.53	.70	.61	.91	.78	.86	.80	.41	.41	.94	.77	.87	.71	.70	.71	.52	.81	.66	.29	.68	.64	.81	.51			.28	.58	.64
2.	.79	1.00	.75	.89	.79	.56	.48	.53	.47	.24	.21	.65	.51	.54	.57	.57	.53	.41	.62	.51	.25	.56	.48	.62	.40			.23	.44	.52
3.	.58	.79	1.00	.62	.47	.38	.32	.34	.29	.15	.11	.45	.35	.35	.43	.41	.37	.33	.44	.39	.21	.38	.32	.42	.26			.16	.29	.36
4.	.67	.89	.66	1.00	.51	.55	.47	.52	.48	.26	.21	.59	.46	.51	.50	.47	.47	.34	.55	.47	.19	.48	.43	.53	.33			.18	.40	.48
5.	.72	.85	.52	.56	1.00	.42	.35	.39	.33	.16	.17	.52	.42	.42	.47	.48	.42	.34	.52	.40	.20	.47	.40	.53	.37			.23	.38	.42
6.	.78	.43	.31	.35	.40	1.00	.87	.96	.92	.45	.47	.82	.69	.83	.54	.52	.56	.43	.65	.58	.17	.49	.49	.62	.39			.19	.50	.56
7.	.52	.27	.21	.20	.27	.73	1.00	.80	.74	.33	.36	.70	.58	.71	.45	.46	.46	.34	.56	.49	.13	.43	.42	.54	.35			.19	.46	.52
8.	.65	.32	.21	.30	.28	.88	.56	1.00	.87	.36	.38	.78	.68	.81	.51	.49	.51	.33	.61	.57	.11	.43	.45	.57	.36			.15	.46	.54
9.	.52	.24	.16	.21	.21	.76	.45	.74	1.00	.38	.45	.73	.62	.78	.47	.43	.48	.30	.53	.48	.11	.39	.42	.52	.32			.13	.44	.48
10.	.23	.10	.07	.08	.10	.43	.21	.18	.12	1.00	.34	.36	.26	.36	.24	.22	.29	.13	.29	.24	.06	.25	.24	.31	.20			.14	.27	.24
11.	.22	.05	.00	.05	.05	.53	.18	.30	.47	.75	1.00	.39	.29	.40	.24	.22	.32	.14	.26	.22	.05	.23	.23	.30	.19			.05	.24	.24
12.	.91	.60	.42	.51	.57	.71	.48	.63	.49	.20	.23	1.00	.83	.92	.75	.75	.77	.47	.70	.58	.25	.62	.61	.74	.42			.26	.53	.56
13.	.61	.35	.24	.29	.34	.56	.41	.53	.41	.17	.16	.73	1.00	.80	.55	.51	.53	.34	.56	.48	.19	.44	.43	.54	.30			.15	.41	.49
14.	.69	.37	.23	.33	.35	.69	.46	.70	.56	.17	.26	.83	.68	1.00	.59	.55	.60	.35	.60	.54	.16	.47	.50	.59	.36			.18	.46	.52
15.	.72	.53	.39	.44	.50	.46	.29	.36	.27	.15	.14	.74	.37	.43	1.00	.64	.61	.40	.53	.43	.25	.55	.45	.55	.34			.20	.38	.39
16.	.74	.58	.41	.49	.54	.44	.25	.33	.25	.12	.76	.75	.39	.43	.65	1.00	.63	.42	.52	.40	.26	.54	.46	.55	.31			.27	.38	.42
17.	.71	.49	.34	.41	.46	.50	.33	.42	.34	.19	.16	.71	.40	.48	.58	.66	1.00	.35	.54	.43	.20	.53	.46	.60	.33			.24	.44	.35
18.	.60	.49	.38	.38	.48	.47	.23	.24	.17	.09	.09	.51	.28	.28	.43	.47	.35	1.00	.50	.34	.70	.47	.34	.43	.26			.20	.26	.31
19.	.78	.59	.41	.49	.57	.47	.26	.38	.27	.12	.12	.65	.38	.42	.55	.57	.51	.57	1.00	.79	.37	.57	.55	.77	.56			.28	.48	.61
20.	.40	.28	.18	.24	.26	.26	.14	.22	.15	.11	.06	.32	.25	.24	.25	.25	.25	.26	.63	1.00	.19	.42	.38	.49	.32			.17	.34	.54
21.	.59	.46	.32	.39	.42	.39	.20	.35	.30	.67	.11	.51	.34	.38	.42	.44	.40	.36	.75	.40	1.00	.31	.23	.26	.16			.15	.11	.16
22.	.74	.56	.40	.47	.52	.43	.26	.32	.24	.15	.13	.62	.34	.39	.58	.58	.53	.42	.58	.28	.43	1.00	.48	.62	.39			.33	.49	.41
23.	.47	.31	.20	.25	.31	.28	.19	.21	.17	.13	.06	.43	.21	.25	.34	.35	.35	.23	.44	.21	.27	.36	1.00	.61	.40			.28	.42	.47
24.	.77	.59	.43	.50	.55	.45	.29	.33	.24	.10	.13	.65	.35	.37	.53	.57	.53	.48	.74	.25	.46	.60	.41	1.00	.48			.31	.54	.54
25.	.41	.35	.20	.27	.33	.25	.16	.20	.17	.11	.13	.28	.21	.22	.26	.35	.33	.23	.50	.19	.25	.37	.28	.44	1.00			.22	.33	.36
26.	.67	.59	.46	.50	.54	.42	.23	.32	.25	.13	.11	.39	.38	.40	.41	.54	.53	.43	.53	[illegible]	.38	.54	.31	.54	.36	1.00				
27.	.66	.56	.41	.48	.51	.43	.27	.35	.27	.13	.13	.41	.33	.41	.44	.53	.50	.39	.52	.23	.37	.51	.31	.52	.36	.97	1.00			
28.																												1.00	.27	.14
29.																													1.00	.39
30.																														1.00

in their knowledge and skills in the areas being assessed. In order to provide some additional information about the posttests, a description and sample items are presented in Appendix B.

Table 6 presents the intercorrelations obtained among the battery subtests at pretest and at posttest. The pre and post subtests cluster as one would expect -- matching with matching, for example. The Peabody Picture Vocabulary Test does not seem to be particularly related to the subtests.

4. Pretest Parent Questionnaires:

This measure was used in order to be able to describe the children and their home backgrounds. It was also used to obtain baseline data on the children and their home backgrounds with the expectation that there might be measurable changes as side effects from the viewing of Sesame Street. Variables that were measured by the Pretest Parent Questionnaire include parental level of aspiration for the child, child and parent affluence indices, parental attitudes to education, pre-Sesame Street TV viewing habits of the child, socioeconomic status of the family, and "intellectual climate" in the home. The operational measures of these variables and the frequency count per item can be seen by reference to the questionnaire itself. (See Appendix C)

Of special concern is the socioeconomics status (SES) variable. Often when this amorphous concept is introduced into research, it tends to cloud the problems it is presumably supposed to clarify. Two approaches were taken here. First, as complete a description as possible of the sampled children's socioeconomic backgrounds was provided. Thus, descriptive profiles of the children in each of the four major sites include whether the child has his own room, art materials, toys (puzzles, blocks, games), books, and TV; how often he goes to the public library, playground, museum, live theater, zoo, and movies; whether the parent owns an automobile, black and white TV, color TV, hi-fi or phonograph, encyclopedia, dictionary, still or movie camera, refrigerator, oven, stove, dishwasher, clothes washer, and clothes dryer. It also includes educational and occupational details such as the last grade in school completed by the mother and father, whether parents are employed, what kind of work they do. Other descriptive data on the family were collected, such as number of people living in the home, number of times the family has moved in the last three years, number of years the family has lived in their neighborhood, number of rooms in the home related to the number of people living there, and type of dwelling (see questions 29, 30, 36-47, and 51 in Appendix C). Less direct descriptive indices, though areas of considerable psychological and sociological interest, include the magazines read regularly, the number of books read yearly, and the vocabulary level of the child in relation to his peers of the same age.

As well as this descriptive approach, there was a need, in order to conduct the statistical analyses, to assign to each child a numerical index to represent his SES. At least since the early sociological studies of Lloyd Warner, this problem of assessment has been a matter of considerable inquiry. Intercorrelation matrices, multiple regressions, arbitrary formulas, and theoretical rationales have been daubed on the professional journals to form a disagreeable self-portrait of social scientific mania.

In relation to this study it should be noted that three of the four sites were chosen specifically because they contain "ghetto," lower class areas in which we could work. For example, in Boston we worked in such poverty areas as Roxbury, Dorchester, and South End. Our at-school children attended Head Start centers in areas federally labeled as having a high evidence of poverty. Many of the indigenous testers we employed were themselves on welfare. Most of the homes in these sites were either in old and decrepit houses or walk-up apartments, or else were situated in large apartment complexes specifically designated as lower income. To use two of Warner's original scales (dwelling area and type and conditions of housing) would mean that most of our sample in the three sites would receive a numerical assessment that would fail to differentiate among them. To attempt to obtain and use amount of income or even source of income as the SES index would be to invite expulsion from our study sites. The delicate negotiations that granted us the privilege of working there provided overwhelming subjective support for this contention. One relevant index of SES that we were able to obtain, which does differentiate our sample and is relatively highly correlated with SES[1] (the correlation varying from study to study but averaging about .80) is the level of education of the parents. This index can be expected to be more sensitive to the educational nuances of this study than an index more closely related to purely economic and occupational levels. Where this information is available on both parents, the mean of the two assessments was used.

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[1] See the work of Hollingshead, A. B., Elmtown's Youth, Wiley, N.Y., 1949, and of Warner, W. L., Meeker, M., and Eells, K., Social Class in America. new edition, Harper, N.Y., 1960. The decision to use this index was taken only after consultation with a number of sociologists (Professors Melvin Tumin of Princeton University, David Wilder of Columbia University, and Dr. Robert Feldmesser of ETS).

The Pretest Parent Questionnaire was filled in by the parent -- in private. However, help was provided by ETS field staff if the parent requested or obviously required assistance. The parents in the disadvantaged sites were paid $3.00 each for filling out the questionnaire. Most parents said they were able to fill out the questionnaire in about 30 minutes.

5. Posttest Parent Questionnaires:

This instrument (see Appendix D for format and item frequency distributions) was developed to provide data on two major groups of variables. One group of variables was concerned with the second assessment of some of the items included in the Pretest Parent Questionnaire. This second assessment enabled ETS to find out whether there have been important side effects such as changes in particular mother-child interactions (Questions 7 and 8), and level of aspiration for child (Questions 10 and 11). A second group of variables was concerned with the TV viewing habits of the child (Questions 19, 20, 21, 22, and 23), and more specifically with his Sesame Street viewing habits (Questions 24, 25, 26, 27, 28, 29, 30, 31, 32, and 33).

Again, the parent was paid $3.00 for filling out the questionnaire, and the time taken was again about 30 minutes.

6. Viewing Records:

The need was paramount to measure accurately the degree of viewing of the children for whom valid pretest and posttest data were obtained. Amount of viewing is a difficult variable to measure even when great sums of money and highly sophisticated techniques are employed. The ETS approach was to prepare an index based upon four measures.

a. From the Posttest Parent Questionnaire (on children in all groups) a score was derived from the response to four questions (see Appendix D):

    23. What are the names of the shows that your child watches on the Educational Television channel?

    24. Does your child ever watch the TV show Sesame Street?

    25. About how many times a week does your child watch Sesame Street?

    26. About how much of each Sesame Street show does he usually watch?

    The answers to these questions were weighted for a total maximum score of 10 and a minimum score of 0.

b. From the Sesame Street Test in the posttesting of the children, a score from 0-10 was obtained.

c. Viewing sheets were obtained on all encouraged children, at home and at school. The mothers (or teachers) of these children filled in each day a report on the amount of Sesame Street watched, and the reports were picked up by the observer on her weekly visit (see Appendix E). From these reports a score indicative of amount of viewing was derived. Obviously, these records could not be kept for not-encouraged children who were not told by the study staff about Sesame Street. Scores of 0, 1, 2, or 3 were entered for each day indicating the amount of viewing.

d. From TV Guide responses (for at-home encouraged and not encouraged children) a score was derived. About once a month the mothers of these children were given a complete listing of the daytime shows on all TV channels receivable in their area. The mothers noted the shows watched by their children on the following day.

Scores on each of these four measures of amount of viewing were converted into percentages and combined arbitrarily with a weighting of one given to each measure. The interrelationship of these measures is indicated in Table 7. It can be seen that there is, as one might hope, a considerable degree of overlap among the measures.

All groups of children have amount-of-viewing scores based on measures a. and b. above, but only some groups have amount-of-viewing scores based upon c. and d. above. Initially, for analyses requiring intergroup comparisons, only those indices that are held in common were to be used. For intragroup comparisons, all indices possessed for that group were to be used. Thus, at-home, encouraged, observed children had all four indices, and these were to be combined in order to investigate, for example, the relationship between their home backgrounds and their amount of viewing.

TABLE 7

Correlations of the four measures of amount of viewing and of the composite viewing score based upon an equal weighting of all available amount of viewing measures.

	1. Sesame Street Test	2. Posttest Parent Questionnaire	3. Viewing Records	4. TV Logs	5. Composite Viewing Score
1.	.87	.46	.42	.23	.85
2.		.70	.39	.40	.66
3.			.55	.43	.42
4.				.54	.38
5.					.91

NOTE: 1. Underlined diagonals are the multiple regression of the other four measures on the indicated measure. Thus, the score on the *Sesame Street* test could be effectively predicted by the other four scores (R=.87).

2. Viewing records and TV logs had lower intercorrelations with the other measures. There was a considerable number of cases for whom these records were not kept - see text. There was also a large number of tied scores.

In a comparison of these children with the children in the at-school, not-encouraged group, only indices a. and b. were to be used. After inspection of the data it was decided to obtain a viewing score for each child based on the measures available and to use that score throughout.

7. Observation Records:

Children in the at-home, encouraged, observed category were observed by ETS personnel for a half hour once a week. All classrooms in the observed category were observed once a week (two different children in the class being focused upon each week in regular rotation). ETS observers were sent descriptions of eight specific segments of each show. They watched a child's reactions to each of the first four segments for that day's show, noting their observations on the record provided (see Appendix F). They watched a different child's reactions to each of the last four segments. The record thereby obtained indicates the child's verbal, visual, and motor responses to each segment. The segments were coded in terms of the television techniques involved in the segment (puppets, people, animation, and so on) so that ETS would be able to provide information on the verbal, visual, and motor reactions of children to major characters, various filmed segments, animation, and other similarly classifiable presentation techniques.

8. Content Analyses of Sesame Street:

Two major analyses were carried out. One consisted of noting the segments of the show, how often they were repeated, and the content of each segment. For example, the segment on Buddy and Jim on the seesaw was telecast on November 30, December 18, January 15, February 16, March 24. Words in the "X" commercial are box, fox, ox, fix, ax, exit, and this segment was televised on nine days: November 17, 18, 21, 26, and February 5, 9, 11, 12, 18. Such knowledge was found to be useful in posttest development and data interpretation.

A second set of content analysis data was obtained through a 30-second, time-sample technique. Every 30 seconds of each show a note was made as to the specific goal being taught (goals 01-73) and the specific television technique being used to teach that goal (techniques 01-48). For example, at a given moment it might have been counting (11) using animation (04) or it might have been relational concepts--size (26) using a film involving people and animals (16). (See Appendix G for the actual classification table.) The data thereby obtained were subsequently related to observation record data on the children's reactions and to test data on amount of learning. Such relationships thereby observed could not, with this descriptive approach, be interpreted as causal, but we hoped we might obtain insights that would prove useful for future production and for formative and summative research.

9. Sesame Street Parent-Teacher Guide Interviews:

A short (less than five-minute) interview was developed to find out whether mothers of the at-home children had used the Sesame Street Parent-Teacher Guide. The interview also obtained information on how the guides were obtained and how they were used. Such data could be related to the effects of Sesame Street on the child. The interview schedule appears in Appendix H.

10. Teacher Questionnaires:

Teachers of the encouraged classrooms were asked to answer a number of questions in which their attitudes toward Sesame Street and how they used the show in their classrooms were elicited. This questionnaire is presented in Appendix I.

These, then, along with essential demographic data (age, sex, address, etc.), were the 10 major variable categories (2 through 10 above) by which the hundreds of thousands of items of information collected in the evaluation were conceptualized and collected. They contain data that can be used in a number of ways, reduced in a number of ways, and analyzed in a number of ways. The remainder of this chapter will describe field operations and will relate how the overall sampling and measurement strategies were put into effect to provide the data needed to answer the research questions posed for this study.

C. Field Operations

Perhaps the least studied, least understood, but most vital aspect of large scale evaluation is field operations. The best measures that time, genius, and good fortune can procure, the most brilliant research design that modern social science can conceive -- all these are absurd trappings if there is failure at the field operations level.

In recent years, field operations have become increasingly difficult, especially in urban ghetto communities. Stereotypes abound to add to the general confusion. Listen to corridor conversations of social scientists at their annual conventions and you hear tales of hostile ghetto dwellers glowering angrily at the sight of an approaching researcher. As the tale usually unfolds, it sounds like the labors of Hercules and his bouts with Cerberus whose duty it was to prevent the living from entering the shadow kingdom. But the ghetto leaders are not the incarnation of Cerberus and, needless to say, the social scientist can hardly be regarded as Hercules. There are difficulties in working in ghettos just as there are difficulties wherever field research is conducted. But obviously, the difficulties are not insurmountable.

Our first approach was to seek out the community leaders -- not the establishment, institutionalized leaders but those who were part of the community, lived in the community, and were respected by the community. The procedure differed in detail in each inner-city site, but the major principle remained. We needed their help; but we had, as a burden, the reputations of previous researchers who had wielded fine clipboards, who had tested the community's children, and who had not made any obvious contribution to those children's welfare.

The approach for help was made initially to heads of civil rights groups and to selected community agencies such as Community Action Programs administering Head Start. For the most part, once these leaders were convinced of our good faith, our efforts were endorsed and members of the community cooperated with us unreservedly. In more militant communities, our planned work was subjected to closer scrutiny at a number of community levels. While the eventual cooperation was no less, it took longer to make the necessary public and semi-public presentations, and the presentations themselves had to be more detailed. Every community we approached for help provided that help.

The first staff member appointed in each site, after appropriate consultation, was the local coordinator whose role was to conduct and supervise our field operations. We were fortunate to obtain the services of remarkable people -- in our lower SES sites our coordinators were civil rights workers who collectively had a wealth of experience organizing and carrying out such community projects as Head Start. In our middle SES site, our coordinator was a staff member of a women's liberal arts college in suburban Philadelphia. In our rural site, the time of a respected local educator was donated by the local educational authority to act as local coordinator for this evaluation project.

The local coordinator's job specifically included the obtaining and supervizing of indigenous community members. He or she was responsible for selecting the sample and for later testing and observing, the taking care of fiscal and administrative details as they related to the site, continued public relations duties, preliminary checking of all data from the site, and coordination with the central ETS project staff.

Chronologically speaking, the first duty of the local coordinator was the selection of a local staff. In the low SES sites this staff was made up mostly of housewives. The majority of them had less than a high school education, some were on welfare, and hardly any had had experience in a project of this type. They learned, and they learned well. In the middle SES site, the local staff consisted mostly of college students. They communicated well with the teachers, mothers, and children of our sampled homes and nursery schools.

The field staff was trained to conduct the sampling. The approach to use when conducting the door-to-door canvassing was described. Role playing was one of the techniques used in the training of the staff to carry out the canvassing systematically.

Training for both the pretesting and posttesting phases took two days in each site. The test batteries had been specifically prepared so that inexperienced testers could be readily trained. There were, of course, training problems. In two of the sites a small proportion of the potential testers were discontinued during training due to their inability to learn and retain simple directions. However, the fact that over 50 inexperienced testers were trained so quickly and well is testimony to the forethought during test development.

An important criterion of the success of the field training for the pretesting and posttesting was to be found in the quality of the data gathered. The reliabilities of each test have already been presented and seem to indicate a high quality of test administration. The test batteries had been so constructed that improper testing could readily be discovered by experienced ETScentral staff. As test data were received at ETS, they were given a quality control examination before being coded for keypunching. In the pretesting, from 1,279 tests received, 155 from two of the five sites were rejected. If more than one test battery administered by a particular tester was found to be defective, all of the tests she administered were rejected. She was then either retrained or discontinued. Thus, of the 155 test batteries rejected, not all were found to be defective, (some were rejected in a "guilt by association" step), but it was thought worthwhile to be extremely rigorous on the issue of data quality, rejecting some good tests in preference to accepting some bad ones. None of the posttest batteries was found to be defective. The following listing presents some details on which children's pretest batteries were rejected.

Boston Rejects

	Home 39	School 81	Total 120
Encouraged and Observed	18	61	79
Not Encouraged	15	20	35
Encouraged not Observed	6	0	6

Durham Rejects

	Home 22	School 13	Total 35
Encouraged and Observed	8	1	9
Not Encouraged	11	12	23
Encouraged not Observed	3	0	3

	Total		
	Home 61	School 94	Total 155
Encouraged and Observed	26	62	88
Not Encouraged	26	32	58
Encouraged not Observed	9	0	9

During the period between the pretesting and the posttesting, that is, during the running of the first season of Sesame Street, the field staff was busy in each site with observation duties and the collection of viewing record forms. Despite the potential problems generated by having over 40 tester-observers visiting over 30 classrooms and over 500 homes (some classrooms and homes were visited as often as once a week), the work in each site was virtually free of major problems.

This chapter has described the sites in which the study occurred, the children who were involved, the measuring instruments that were administered, and the field operations that fused these activities into an evaluation project. The next chapter will present and interpret the results.

CHAPTER III: RESULTS

The first two chapters of this report indicate that a great deal of information relevant to the evaluation of Sesame Street was obtained. Before Sesame Street was telecast, more than 1,200 children were pretested on more than 220 items. As well, their parents responded to a questionnaire containing 51 items. During the six months of the show about half the children were observed viewing various segments, and the content of the show itself was analyzed by the ETS staff. Records were maintained by parents and teachers on the amount of viewing of the children. When the first season of Sesame Street ended the children were posttested on more than 240 items, their parents responded to a 35-item questionnaire, and the preschool teachers involved in the study responded to a 12-item questionnaire.

This chapter will report how these extensive data were analyzed in order to answer a series of questions that had first been raised in the ETS proposal for the evaluation of Sesame Street (August, 1969). The questions were:

> What, overall, is the impact of Sesame Street?
>
> What are the moderating effects of age, sex, prior achievement level, and SES on the impact of Sesame Street?
>
> Do children at home watching Sesame Street benefit in comparison with children at home who do not watch it?
>
> Do children in preschool classrooms benefit from watching Sesame Street as part of their school curriculum?
>
> Do children from Spanish-speaking homes benefit from Sesame Street?
>
> What are the effects of home background conditions on the impact of Sesame Street?

As well, a number of questions concerning the content of the show and children's and teachers' reactions to it will also be answered.

It should be noted that the chapter does not include an exhaustive set of analyses. The amount and complexity of the data preclude this. It should also be pointed out that a number of worthwhile questions arise from reading the results that are presented here. Time limitations excluded following up all the new questions although in the coming year there will doubtless be further analyses and reports based on these data.

The results to be presented have been divided into three sections. The first section will be mainly descriptive, the second section will include probing analyses of the data, and the third section will include technical statistical treatments of the data.

A. Descriptive Analyses

The demographic composition of the 1,124 children who comprised the initial sample and their pretest scores have been presented in Chapter II (See Tables 3 and 4). There was, as expected, attrition among the subjects. Some was due to the movement of families away from the study sites. As well, all posttesting had to be accomplished in a three week period; and sickness and vacations sometimes prevented the posttesting of every child during this period. The attrition rate was 16.1 percent, and posttests were completely administered to 943 of the children who had been pretested.

Table 8 presents the demographic data on the 943 children and is parallel in form to Table 3. A comparison of these two tables indicates that with respect to demographic attributes, no systematic bias occurred as a result of attrition. All subsequent data banks from which analyses were made were based on the 943 subjects for whom complete pretest and posttest data were available.

The first nine parts of Section A will be devoted to descriptive analyses of the pretest, posttest, and parent questionnaire data of various groupings of the 943 children. The groupings were selected in order to find out the effects of Sesame Street on each group of children. The following groups will be described separately:

1. All 943 children
2. Disadvantaged children
3. 3-, 4-, and 5-year-old children
4. Boys and girls
5. At-home children
6. At-school children

TABLE 8

Descriptive Categorization of the Children for Whom Complete and Acceptable Pretest and Posttest Data Were Obtained

	Total N=943	Boston N=319	Philadelphia N=169	Durham N=186	Phoenix N=206	California N=63
	%	%	%	%	%	%
Sex:						
Male	51.6	50.2	52.1	52.7	54.4	46.0
Female	48.4	49.8	47.9	47.3	45.6	54.0
Location:						
At home	55.0	38.6	61.0	74.7	44.7	98.4
In school	45.0	61.4	39.1	25.3	55.3	1.6
Predominant Language spoken in home:						
English	94.5	97.8	100.0	98.4	80.6	96.8
Spanish	4.6	1.3	0	0	18.0	3.2
Viewing Status:						
Encouraged	63.1	53.9	68.6	74.7	60.7	68.3
Not encouraged	36.1	43.6	31.4	25.3	39.3	31.8
Observation Status:						
Observed	48.1	51.7	53.9	52.7	48.5	0
Not observed	51.9	48.3	46.2	47.3	51.5	100.0
Observation Status of the 62.5% who were Encouraged:						
Observed in school	22.8	30.1	23.7	15.1	24.8	0
Observed in homes	24.1	17.9	30.2	37.6	23.8	0
Not observed in school	0.6	1.6	0	0	.5	0
Not observed in homes	15.6	4.4	14.8	22.0	11.7	68.3
Population Group:						
Black	50.4	60.5	2.4	87.1	56.8	0
Spanish	6.8	1.9	0	0	26.7	4.8
White	42.3	37.6	97.0	12.9	16.5	90.5
Age in Months:						
34	.2	.6	0	0	0	0
35	.7	1.3	0	1.6	0	0

TABLE 8 (continued)

Descriptive Categorization of the Children for Whom Complete and Acceptable Pretest and Posttest Data Were Obtained

Age in Months:	Total N=943	Boston N=319	Philadelphia N=169	Durham N=186	Phoenix N=206	California N=63
	%	%	%	%	%	%
36	.6	1.9	0	0	0	0
37	.7	.9	.6	1.6	0	0
38	.5	1.6	0	0	0	0
39	2.1	4.7	0	2.7	0	0
40	1.1	2.5	0	1.1	0	0
41	1.0	1.3	.6	2.2	0	0
42	1.3	3.1	0	1.1	0	0
43	1.3	2.5	0	1.1	0	3.2
44	3.0	4.4	1.8	1.2	3.4	1.6
45	2.8	3.1	5.9	1.1	1.9	0
46	3.0	1.9	4.1	3.8	2.9	3.2
47	3.9	3.8	4.1	2.7	5.8	1.6
48	5.2	5.0	5.9	4.3	5.3	6.4
49	5.6	4.1	7.1	4.3	8.3	4.8
50	5.0	3.5	8.3	3.8	6.8	1.6
51	7.1	4.2	9.5	5.4	10.2	9.7
52	5.8	4.2	6.5	8.2	6.8	1.6
53	6.9	3.9	7.7	5.4	9.2	16.1
54	5.8	2.3	8.3	5.4	7.3	12.9
55	5.3	2.3	7.1	7.1	6.3	6.5
56	5.5	2.9	10.7	4.9	4.9	8.1
57	6.4	4.5	5.3	6.0	11.2	4.8
58	5.4	4.5	4.7	5.4	6.8	6.5
59	2.7	3.9	.6	2.7	1.9	4.8
60	2.8	2.9	.6	7.1	.5	3.2
61	1.8	3.6	0	2.7	.5	0
62	1.5	4.2	0	.5	0	0
63	1.0	2.6	0	.5	0	0
64	1.0	1.6	0	2.2	0	0
65	1.0	1.9	.6	.5	0	1.6
66	.2	.3	0	0	0	1.6
67	.3	.3	0	1.1	0	0
68	.6	1.6	0	.5	0	0
69	.5	1.0	0	1.1	0	0

7. Advantaged children
8. Spanish-speaking children
9. Rural children

In order to determine the effectiveness of Sesame Street, the amount each child actually watched the show had to be estimated. The four measures used to measure amount of viewing were described previously in Chapter II, B6. Scores for the four measures were combined, with equal weight being given to each, to produce a composite viewing score for each of the 943 children. The children were then divided into quartiles on the basis of their composite scores. The quartiles were:

Quartile 1 (Q1)=children who watched the show rarely or never (about half these children in this category never watched and the other half watched on the average of once a week).

Quartile 2 (Q2)=children who watched the show on the average of two to three times a week.

Quartile 3 (Q3)=children who watched the show on the average of four to five times a week.

Quartile 4 (Q4)=children who watched the show on the average of more than five times a week.

All children in Q2, Q3, and Q4 watched Sesame Street (in differing amounts) and some children in Q1 saw some of the shows. This means that all descriptive analyses will be based on degree of viewing rather than viewing versus non-viewing. Whereas this complicates analyses and descriptions, it attests to the great popularity of Sesame Street among preschool children, including those that ETS did not encourage to watch.

All analyses are based on this division of all children into the four equal viewing quartiles. Analyses of subgroups of the 943 children retained the original quartile division and will therefore reveal unequal numbers in each quartile. The decision to retain the initial quartile division was made for two reasons: 1) to enable a direct comparison of the amount each subgroup viewed Sesame Street. The proportion of each subgroup that viewed most varied considerably, and comparisons of amount of viewing should aid the direction that future promotion of the show takes; 2) to enable a direct comparison of the gains of subgroups. Throughout the descriptive analyses, children in Q1 of one subgroup watched about the same amount of the show as children in Q1 of another subgroup. This is true for Q2, Q3, and Q4 as well. Only in this way could meaningful comparisons be made.

It must be emphasized that data in this section are presented for descriptive purposes only. The reader can decide whether the observed gains seem to be educationally useful. Later, in Section C of this Chapter, the same data will be subjected to statistical treatments in order to determine whether the observed results are statistically significant -- that is, whether the observed differences among the gains of the four quartiles are likely to have occurred by chance or whether the probability of this is exceedingly low. This repeated presentation of the data -- first descriptively, later for statistical analysis -- carries with it the burden of some repetition. However, it also allows a systematic presentation to be made in which technical arguments are grouped together and the flow of descriptive data is uninterrupted. First, then, the descriptions.

1. Descriptive Analysis of All Children

Before turning to the performance of all children for whom complete pretest and posttest data were available, it is important to note that the 943 children were quite varied with respect to such things as age, prior levels of achievement, prior school experiences, and SES characteristics. Information about the 943 subjects may be obtained by referring to the Pretest Parent Questionnaire (Appendix C) and the Posttest Parent Questionnaire (Appendix D). The variety of responses is exemplified in the following data taken from the Pretest Questionnaire:

a) 34% of the male heads of households had not completed high school while 23% had gone to college (Item 40).

b) 18% read 0-1 books a year; 24% read 2-4 books; 19% read 5-10 books; 15% read 10-20 books; and 19% read more than 20 books (Item 50).

And from the Posttest Questionnaire it can be seen that:

a) 3% of the children were never read to and 19% were read to at least once a day (Item 8).

b) 15% of the parents said their children could say the alphabet at 3 or less, whereas 24% thought their children would be 6 or more before being able to do so (Item 18).

Nonetheless, a look at the test results for the 943 children does begin to give a general answer to the question of what, overall, is the impact of Sesame Street. First of all, the way the children responded to the individual items on the pretest gives a broad picture of how much preschool-aged children from various backgrounds knew in the areas being tested before Sesame Street went on the air. In addition, gains made by Q1 children after six months (whether or not Sesame Street was watched) give a general picture of the growth of all of these children. Of course, the data presented here will be broken down later according to different demographic characteristics of the children, but a first look at the performance of all children will give an overview.

The percentages of all children answering each item correctly on the pretest and the posttest, divided into the four viewing quartiles, are presented in Table 9. In general, items are listed in the order in which they were given to the child. It can be seen that there were differences at prestest time among children who would subsequently fall into the four viewing quartiles. That is, those children who subsequently watched Sesame Street on the average of more than five times a week (Q4) performed better on the pretest items than those children who subsequently watched little or none of the show (Q1). In general, the higher the quartile in viewing, the higher the percentage answering an item correctly on the pretest. This confounding of prior achievement and subsequent gains will be dealt with in Sections B and C of this chapter. The pretest data also indicate that some of the children most in need of the knowledge imparted by Sesame Street watched least often.

By looking at the item statistics for the posttests, it can be seen that, with very few exceptions, all percentages increased, regardless of viewing quartile. This was expected since the children were 6 months older than they had been at pretest time. However, and again with very few exceptions, the percentage gain from pretest to posttest also increased as viewing increased. So that even though more Q4 children knew the information being asked at pretest, more of them also learned.

The items dealing with specific goals common to both the pretest and posttest were combined as total tests (e.g., Letters Test, Forms Test) and also as smaller subtests (e.g., Naming Letters, Recognizing Forms) so that a broader picture of the success of each goal area could be assessed. A description of each test and subtest with sample items is presented in Appendix B. The mean total scores and subscores at pretest, the gains, and standard deviations for all 943 children are presented in Table 10. (Posttest scores can be computed by adding pretest and gain scores.) The scores again show the steady increase in gains from Q1 through Q4. In addition to the test scores and subscores, the Peabody Picture Vocabulary Test (PPVT) mean raw scores and mean age in months are also presented to give a general indication of the verbal ability of all children before Sesame Street viewing. As is the case with most other scores, Q4 children also had somewhat higher scores on the PPVT than children in Q's 1, 2, and 3. Graphic representations of the mean pretest scores and gains of children in the four quartiles for all the tests and selected subtests can be found in Figures 1 a-e.*

For the total group, gains from pretest to posttest increased as viewing increased in all eight total test scores (Body Parts, Letters, Forms, Numbers, Relational Terms, Sorting, Classification, and Puzzles). Each of these tests and their subtests will now be discussed briefly with respect to performance of all children.

*Care must be taken in interpreting the bar graphs presented in this report. For the sake of simplicity the means and N's are presented in each figure. Because standard deviations do not appear, the graphs should always be read in conjunction with the tables which accompany them.

TABLE 9

Item Analysis
Percentage of All Subjects Answering Each Item Correctly
on Pretest and Posttest[1]
(by viewing quartiles)

* = Pretest only item
** = Posttest only item
N=943

Test and Item	Pretest % Correct				Posttest % Correct			
BODY PARTS TEST								
Pointing to	Q1 N=231	Q2 N=242	Q3 N=235	Q4 N=235	Q1 N=231	Q2 N=242	Q3 N=235	Q4 N=235
1. Knee	81%	86%	88%	89%	90%	94%	95%	97%
2. Elbow	43	55	65	69	66	79	82	90
3. Thumb	62	78	83	86	82	91	91	97
4. Lip	86	90	91	97	90	95	97	97
5. Heel	34	50	53	63	50	56	66	78
* Leg	90	93	94	97				
* Arm	92	95	96	98				
* Neck	86	93	95	98				
* Head	96	97	95	98				
* Stomach	94	95	97	97				
Naming								
6. Hand	85	83	91	91	81	90	91	96
7. Tongue	87	92	92	96	94	95	98	99
8. Neck	78	86	89	89	79	83	90	91
9. Leg	79	81	88	88	79	87	90	88
10. Finger	71	73	84	89	81	92	91	95
11. Arm	81	88	90	92	81	88	93	95
12. Foot	63	71	75	81	70	86	80	92
13. Thumb	68	83	83	87	86	92	91	98
14. Knee	56	74	74	79	75	79	85	86
15. Elbow	43	60	63	71	69	81	89	90
16. Shoulder	40	48	56	55	53	53	66	73
17. Forehead	12	18	26	29	26	34	48	55
18. Wrist	6	8	13	13	11	19	29	33
19. Cheek	17	30	37	38	32	41	51	59
20. Chin	39	51	60	63	47	63	72	85

[1] Numbered items are included in one or more of the total scores or subscores

TABLE 9

		Pretest % Correct				Posttest % Correct		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
* Nose	96%	96%	96%	99%	%	%	%	%
* Hair	95	96	96	97				
* Teeth	98	97	98	99				
* Ear	94	96	98	97				
* Eye	94	94	97	100				
Function (Pictures)								
21. Pet a dog with (hand)	54	67	71	71	72	83	91	96
22. Smile with (mouth)	49	53	55	54	63	70	72	80
23. Kick a ball with (foot)	67	75	78	79	84	92	94	95
24. Look with (eye)	67	67	76	75	80	89	92	96
25. Smell with (nose)	39	43	53	57	49	67	77	88
26. Hear with (ear)	60	59	69	74	74	82	88	94
27. Walk with (leg)	75	79	87	86	90	94	96	98
28. Chew with (teeth)	65	74	80	80	80	87	93	98
Function (No pictures)								
29. What do you see with?	52	61	67	73	71	84	88	94
30. What do you pick things up with?	56	69	70	78	77	84	89	95
31. What do you lick with?	54	58	69	73	65	79	83	89
32. What do you listen with?	45	52	55	70	65	75	87	94

TABLE 9

LETTERS TEST	Pretest % Correct				Posttest % Correct			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Matching								
1. Ice cream cone	92 %	94 %	93 %	94 %	94%	98%	96%	99%
2. Rectangle	84	88	90	92	91	98	96	97
3. Circle	86	88	92	85	93	98	99	97
4. Triangle	67	71	80	79	83	91	91	94
5. Upper case R	87	90	94	97	94	99	98	100
6. Upper case D	84	89	93	97	95	99	98	99
7. Upper case W	74	73	80	84	82	90	94	96
8. Upper case N	65	75	77	80	83	87	92	96
9. 3	78	85	91	92	92	97	97	98
10. 2	80	83	90	94	88	96	98	99
11. Upper case IS	57	69	77	78	78	87	91	95
12. Lower case who	39	45	45	44	42	54	55	64
13. What are they? (letters)	10	14	21	26	18	29	43	49
14. Used to read or count?	22	28	31	28	23	34	46	55
Recognizing Letters								
15. Upper case A	33	35	40	49	48	58	78	88
16. Upper case P	21	25	33	37	20	52	69	81
17. Upper case J	23	31	36	46	42	60	75	86
18. Upper case M	33	31	29	34	37	43	53	71
19. Lower case a	32	26	28	33	33	41	60	67
20. Lower case t	32	34	41	42	42	55	68	78
21. Lower case d	33	26	33	32	29	34	42	43
22. Lower case f	22	24	27	30	29	44	57	67
Naming Letters								
23. Upper case A	22	24	29	34	35	50	68	82
24. Upper case F	8	9	13	19	16	27	45	66
25. Upper case P	9	12	20	23	17	36	56	72
26. Upper case D	10	8	11	17	19	30	46	61
27. Upper case S	7	9	15	17	16	31	46	65
28. Upper case C	8	11	15	17	19	30	46	64
29. Upper case W	5	5	9	14	14	38	53	72

TABLE 9

	Pretest % Correct				Posttest % Correct			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
30. Upper case H	5%	8%	12%	18%	15%	28%	46 %	66 %
31. Upper case O	12	16	17	28	26	53	74	88
32. Upper case R	6	8	12	17	14	25	46	68
33. Upper case B	13	12	17	24	26	43	58	74
34. Upper case E	8	10	10	15	15	31	48	68
35. Upper case I	4	6	7	12	9	25	48	66
36. Upper case G	3	5	8	11	12	23	42	55
37. Upper case Y	2	6	9	13	11	23	42	59
38. Upper case U	2	6	5	11	10	25	44	65
39. Lower case b	9	12	9	15	14	22	44	39
40. Lower case r	3	6	6	9	8	18	29	42
41. Lower case i	10	11	16	18	16	33	54	69
42. Lower case y	3	5	8	10	10	20	38	53
43. Lower case m	5	6	6	9	12	21	34	51
44. Lower case e	5	9	5	9	11	22	38	54
45. Lower case t	7	8	9	14	12	26	44	56
46. Lower case g	3	3	1	5	5	9	13	23
Matching Letters in Words								
47. Upper case D in DOG	88	87	91	90	94	98	97	98
48. Lower case a in act	53	63	69	69	81	89	93	96
49. Upper case C in ACT	69	75	81	82	87	95	96	97
50. Lower case i in kin	77	80	85	84	88	86	96	98
Recognizing Letters in Words								
51. Upper case S in SIP	41	44	42	39	42	60	65	80
52. Upper case T in NET	41	33	39	44	54	52	67	76
53. Lower case b in bugs	28	31	30	29	42	45	57	63
54. Lower case n in cone	26	27	30	29	29	35	39	46
Initial Sounds								
55. Begins with T	15	21	26	26	24	27	35	43
56. Begins with C	22	31	33	26	26	28	35	29
57. Begins with A	31	35	39	33	33	41	47	55
58. Begins with P	20	22	26	27	24	33	31	37
** Begins with W					45	67	75	83
** Begins with L					17	28	33	46

TABLE 9

	Pretest % Correct				Posttest % Correct			
Reading Words	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
59. Upper case DOG	0%	1%	2%	4%	2%	7%	11%	26%
60. Upper case HAT	0	1	1	2	0	1	3	4
61. Lower case egg	1	1	0	1	1	1	6	10
62. Upper case STREET	0	0	0	1	0	1	2	3
63. Lower case judge	0	0	0	0	0	0	0	0
64. Upper case MAIL	0	1	0	1	0	1	2	4
65. Wrote name correctly	1	3	6	9	7	17	27	29
Wrote name with 1 or 2 errors	2	3	4	5	4	11	13	15
Said alphabet without mistakes	2	3	5	4	9	25	42	55
FORMS TEST								
Pointing to								
1. Circle	77	84	84	87	87	91	97	97
2. Rectangle	24	29	30	31	36	50	52	73
3. Triangle	53	60	59	62	65	71	75	85
4. Two different triangles	31	35	38	35	42	53	60	76
Naming Forms								
5. Square	13	29	29	29	31	54	68	84
6. Rectangle	8	13	12	11	15	34	43	64
7. Circle	46	60	66	66	68	79	86	91
8. Triangle	22	30	36	42	42	64	69	84

TABLE 9

	Pretest % Correct				Posttest % Correct			
NUMBERS TEST	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
1. What are they? (numbers)	20%	26%	33%	34%	32%	47%	57%	70%
2. Used to count or read?	41	44	48	51	50	67	66	84
Recognizing Numbers								
3. 1	36	45	50	57	51	69	78	84
4. 4	25	29	34	42	36	57	66	82
5. 2	30	29	36	43	38	54	67	83
6. 10	29	27	32	40	36	51	66	81
7. 6	25	27	29	39	41	55	61	61
8. 20	23	24	24	26	29	36	43	45
Naming Numbers								
9. 4	14	17	25	34	26	50	66	80
10. 7	7	11	11	17	13	30	44	63
11. 1	20	29	36	46	36	56	71	82
12. 8	7	13	13	22	15	29	44	66
13. 3	10	16	24	35	25	44	63	79
14. 5	10	17	18	32	23	43	58	77
15. 2	11	14	23	35	27	42	63	80
16. 10	8	12	12	18	16	32	48	66
17. 6	8	10	14	22	16	29	46	62
18. 0	6	10	16	27	14	28	43	62
19. 9	6	5	8	13	11	20	34	45
20. 11	5	5	7	9	10	14	29	42
21. 17	2	3	3	6	4	8	16	26
22. 20	2	2	5	6	5	9	18	27
23. 12	2	4	5	7	4	10	18	27
Counting & Numerosity								
24. Which has 1?	78	83	91	91	91	93	97	100
25. Which has more?	84	83	92	89	92	96	96	97
26. Which has 2?	74	86	86	90	90	95	95	98
27. Which has fewer?	20	16	20	19	12	12	13	17
28. Which has 5?	47	55	62	71	60	74	80	87
29. Which has fewest?	20	22	22	16	10	13	14	15
30. Which has most?	32	42	38	40	42	55	54	60

TABLE 9

		Pretest % Correct				Posttest % Correct			
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
31.	Which have same?	22%	31%	34%	32%	35%	43%	56%	66%
32.	Conservation	18	26	29	34	31	45	61	60
33.	How many checkers? (10)	24	33	38	40	38	51	67	67
34.	Take 4	23	40	48	54	45	58	68	80
35.	Take 2	58	67	71	77	75	89	89	93
36.	Give 6	16	29	38	40	28	43	49	67
37.	Take all	85	83	90	92	94	94	97	98
38.	Give some	76	76	84	84	82	93	92	94
39.	Which has more? (5 or 4)	52	55	60	66	76	83	77	85
40.	Which has more? (3 or 4)	43	45	51	50	62	69	75	77
	Conservation (both 39 and 40)	32	31	38	40	49	60	60	69
41.	Count 3	61	63	74	80	72	85	92	94
42.	Add 1	33	46	50	52	46	57	70	80
43.	Count 4	50	60	69	71	65	81	86	92
44.	Minus 1	37	43	51	57	50	62	71	81
**	Which is first?					80	88	91	94
**	Which is last?					23	39	42	51
Verbal									
45.	How many hands?	55	64	72	76	64	79	83	86
46.	How many ears?	73	74	83	87	87	92	96	97
47.	How many heads?	72	78	79	78	82	91	94	97
48.	How many fingers?	14	16	27	26	26	35	41	57
49.	How many feet?	62	67	77	80	75	88	84	89
50.	Half = 2 pieces	36	48	56	54	55	64	73	78
51.	2 + 1	12	13	21	29	19	25	29	35
52.	5 + 3	1	4	6	6	4	8	6	9
53.	3 - 1	7	13	14	17	11	17	19	23
54.	2 x 2	2	5	8	6	7	12	17	17
	Counted to 10 or more without mistakes	27	40	48	57	55	72	84	87

TABLE 9

	Pretest % Correct				Posttest % Correct			
SORTING SKILLS TEST	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
1. By form	55%	67%	67%	69%	77%	86%	93%	99%
2. By size	32	35	35	40	37	50	62	66
3. By number	35	37	39	43	43	60	70	74
4. By number	45	41	48	47	36	46	51	57
5. By function	25	17	22	23	35	39	53	66
6. By function	13	15	11	12	51	67	79	85
Classification (Verbally)								
7. Wear shoes, shirt, and ______.	90	94	93	94	94	96	97	97
8. Eat bread, chicken, ______.	86	89	91	91	90	97	97	96
9. Ride train, bus, and ______.	67	76	78	80	75	90	95	95
10. Balloon round, egg round, and ______.	44	50	55	63	61	71	78	89
11. Cow animal, chicken animal, and ______.	54	67	71	81	74	84	90	95
12. 2 ears, 2 feet, and 2 ______.	61	69	77	80	77	86	91	96
RELATIONAL TERMS TEST								
1. Biggest	90	97	95	97	95	98	100	100
2. Smallest	76	81	80	81	81	92	94	92
3. Over	45	59	60	62	53	69	74	81
4. Nearest	38	54	55	51	51	60	64	73
5. Through	49	51	50	54	49	56	61	67
6. On	80	86	89	91	87	92	97	96
7. Between	44	53	54	57	52	59	64	71
8. Around	55	62	69	71	61	73	83	90
* In	44	50	54	59				
* Under	42	46	48	43				
CLASSIFICATION SKILLS TEST								
1. By class	62	61	64	66	60	79	86	91
2. By shape	67	75	75	79	71	88	88	92
3. By size	69	71	73	79	67	86	86	94
4. By size	39	42	49	52	39	56	69	75
5. By number	45	55	57	64	55	62	76	80

TABLE 9

		Pretest % Correct				Posttest % Correct			
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
6.	Verbal reasoning for number	11%	16%	22%	29%	23%	37%	55%	63%
7.	By number	50	50	51	49	51	51	59	58
8.	Verbal reasoning for number	5	6	11	14	13	18	35	40
9.	By number	17	29	31	35	27	33	38	51
10.	By shape	30	36	43	44	37	55	63	73
11.	Verbal reasoning for shape	3	8	7	11	6	18	23	26
12..	By shape	53	67	66	64	62	79	86	89
13.	Verbal reasoning for shape	5	15	21	22	20	38	63	66
14.	By class	26	36	38	37	32	56	63	74
15.	By function	72	78	80	77	81	91	92	96
16.	By class	55	53	61	60	62	80	87	91
17.	Verbal reasoning for class	9	16	19	26	26	47	66	74
18.	Double by size and class	45	54	51	52	45	55	63	76
	PUZZLES TEST								
1.	Leg missing on table	42	34	46	55	50	55	61	74
2.	Dog eating at table	42	47	49	48	52	64	71	75
3.	Car with square wheels	40	46	54	62	54	71	71	86
4.	Leg missing on chicken	32	35	37	42	33	37	36	33
5.	TV with triangular screen	36	50	47	57	50	64	79	81
Verbal Reasoning									
**	What's funny on see-saw?					61	79	88	94
	What's missing on telephone?	17	20	27	34	21	31	40	46
	Hammering nail with balloon	39	36	46	49	55	74	80	86
	Airplane on tracks	35	49	60	66	59	76	89	95
**	House with small door					22	37	43	46

TABLE 9

	Pretest % Correct	Posttest % Correct			
		Q1	Q2	Q3	Q4
	** HIDDEN TRIANGLES TEST				
1.	Triangle	84%	92%	93%	95%
2.	Boat	77	81	87	90
3.	Clown	28	37	37	42
4.	Tent	78	87	90	93
5.	Tree and fence	8	12	7	6
6.	Lizard	24	24	19	20
7.	Elephant	19	20	17	19
8.	Train	23	32	36	32
9.	Alligator	40	37	34	34
10.	Design	50	40	48	44
	** WHICH COMES FIRST TEST				
1.	On a slide: Which first?	37	52	57	70
2.	Blowing up balloon: Which first?	36	44	54	69
3.	Balloon: Which last?	30	41	52	57
4.	Falling off bike: Which first?	44	45	52	64
5.	Bike: Which last?	45	53	54	59
6.	Cutting down tree: Which first?	20	30	41	46
7.	Drinking soda: Which first?	48	60	66	78
8.	Soda: Which last?	36	45	58	63
9.	Shopping: Which first?	36	37	55	57
10.	Painting house: Which first?	44	38	46	55
11.	Painting: Which last?	45	51	57	54
12.	Walking down street: Which first?	35	45	52	66

TABLE 9

	Pretest % Correct	Posttest % Correct		
** SESAME STREET TEST (Knowledge of Characters)	Q1	Q2	Q3	Q4
1. Which is Gordon?	43%	64%	86%	98%
2. Which is Bob?	21	58	84	98
3. (Susan) Who is she?	13	45	74	91
4. (Mr. Hooper) Who is he?	10	46	78	94
5. What's name of show?	30	75	89	97
6. Which is Oscar?	31	79	96	100
7. (Bert and Ernie) Who are they?	11	53	83	96
8. (Buddy and Jim) Who are they?	17	64	88	98
9. (Big Bird) Who is this?	36	83	96	99
10. What does sign say? (Sesame Street)	18	56	80	89

	Pretest							
	Q1		Q2		Q3		Q4	
Alphabet	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Last letter said without a mistake	3.5 (C+)	4.6	4.8 (D+)	6.2	5.5 (E+)	6.8	6.5 (F+)	7.5
	Posttest							
	Mean	SD	Mean	SD	Mean	SD	Mean	SD
	7.4 (G+)	8.0	11.6 (K+)	9.7	16.1 (P+)	9.9	18.5 (R+)	9.3
	Pretest							
Recitation of Numbers								
Last number said without a mistake	Mean	SD	Mean	SD	Mean	SD	Mean	SD
	6.4	5.3	7.5	5.8	7.9	5.7	9.5	5.6
	Posttest							
	Mean	SD	Mean	SD	Mean	SD	Mean	SD
	9.7	5.9	11.7	5.8	13.6	5.6	14.2	5.2

TABLE 10

Pretest and Gain Scores for All Children
(by quartiles)
N = 943

Test & Subtest	Maximum Possible Score	Q_1 N=231				Q_2 N=242				Q_3 N=235				Q_4 N=235			
		Pretest		Gain		Pretest		Gain		Pretest		Gain		Pretest		Gain	
		Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Grand Total	203	76.32	24.73	19.34	19.92	86.29	27.11	30.80	21.77	94.1	28.7	39.16	23.84	100.94	30.62	48.15	25.44
Body Parts Total	32	18.13	6.86	3.98	5.74	20.60	6.44	4.24	5.43	22.27	6.54	4.29	5.35	23.41	5.82	4.73	4.75
Pointing to Body Parts	5	3.06	1.44	0.73	1.42	3.57	1.34	0.59	1.20	3.80	1.23	0.50	1.20	4.07	1.08	0.53	1.06
Naming Body Parts	15	8.26	3.05	1.38	2.67	9.46	2.98	1.36	2.69	10.17	2.95	1.57	2.63	10.66	2.63	1.71	2.51
Function of Body Parts (Point)	8	4.75	2.42	1.16	2.59	5.17	2.25	1.46	2.24	5.69	2.12	1.36	2.06	5.75	2.19	1.70	2.00
Function of Body Parts (Verbal)	4	2.06	1.55	0.71	1.71	2.39	1.42	0.83	1.47	2.60	1.52	0.86	1.48	2.93	1.43	0.80	1.28
Letters Total	58	13.24	6.04	4.44	7.65	14.54	7.23	8.79	9.24	16.16	7.98	13.51	10.90	17.88	9.72	17.60	11.53
Recognizing Letters	8	2.28	1.70	0.61	2.33	2.34	1.83	1.52	2.39	2.68	1.90	2.33	2.48	3.06	2.10	2.75	2.62
Naming Capital Letters	16	1.23	2.42	1.52	3.55	1.54	3.28	3.64	4.92	2.08	3.68	5.99	5.33	2.98	4.43	7.91	5.45
Naming Lower Case Letters	8	0.46	1.11	0.43	1.61	0.60	1.32	1.12	2.26	0.60	1.26	2.34	2.52	0.89	1.70	2.98	2.71
Matching Letters in Words	4	2.87	1.19	0.63	1.17	3.05	1.21	0.73	1.16	3.26	1.06	0.55	1.04	3.25	1.05	0.64	1.12
Recognizing Letters in Words	4	1.37	1.11	0.30	1.36	1.36	1.04	0.57	1.36	1.40	1.11	0.89	1.45	1.41	1.19	1.24	1.53
Initial Sounds	4	0.65	0.75	0.16	1.08	0.78	0.76	0.22	1.16	0.91	0.83	0.22	1.23	0.85	0.81	0.50	1.20
Reading Words	6	0.01	0.15	0.02	0.26	0.05	0.44	0.05	0.51	0.03	0.21	0.20	0.61	0.09	0.50	0.37	0.74
Forms Total	20	8.55	3.47	2.39	3.73	10.09	3.91	3.43	3.91	10.65	3.61	4.18	3.93	11.11	3.48	5.34	3.55
Recognizing Forms	4	1.97	1.20	0.37	1.62	2.17	1.21	0.48	1.61	2.22	1.21	0.66	1.73	2.25	1.20	1.08	1.47
Naming Forms	4	0.88	1.06	0.68	1.31	1.32	1.27	0.99	1.44	1.43	1.22	1.23	1.36	1.49	1.21	1.74	1.34
Numbers Total	54	16.38	8.31	5.69	6.92	19.23	9.30	9.14	7.98	21.92	10.54	11.25	9.25	24.62	11.04	13.34	8.96
Recognizing Numbers	6	1.68	1.47	0.63	1.68	1.81	1.54	1.41	1.89	2.07	1.70	1.73	2.09	2.51	1.87	1.85	2.07
Naming Numbers	15	1.19	2.69	1.25	2.93	1.69	3.03	2.76	4.03	2.20	3.59	4.41	4.12	3.33	4.18	5.51	4.44
Numerosity	6	2.96	1.50	0.93	1.66	3.61	1.73	0.91	1.63	3.95	1.68	0.81	1.66	4.26	1.63	0.98	1.43
Counting	9	4.37	2.51	1.26	2.30	4.97	2.57	1.76	2.27	5.67	2.46	1.54	2.34	5.94	2.45	1.65	2.31
Addition and Subtraction	7	1.29	1.30	0.65	1.52	1.73	1.59	0.73	1.55	2.06	1.68	0.80	1.72	2.23	1.76	1.00	1.71
Matching Subtest	11	8.01	2.65	1.20	2.72	8.55	2.48	1.40	2.40	9.13	1.97	0.96	1.90	9.34	1.65	1.02	1.76
Relational Terms Total	17	9.11	2.96	1.19	3.12	9.93	2.93	1.64	3.24	10.43	2.65	1.67	2.79	10.55	3.04	2.28	3.20
Amount Relationships	9	4.35	1.71	0.68	1.96	4.53	1.91	1.04	2.27	4.90	1.81	0.84	2.09	4.91	1.87	1.21	2.10
Size Relationships	2	1.66	0.57	0.10	0.67	1.78	0.44	0.12	0.51	1.75	0.48	0.18	0.49	1.77	0.43	0.15	0.48
Position Relationships	5	2.73	1.48	0.28	1.69	3.09	1.32	0.40	1.58	3.23	1.25	0.56	1.37	3.35	1.24	0.71	1.45
Sorting Total	6	2.29	1.31	0.50	1.79	2.58	1.40	0.90	1.78	2.69	1.50	1.39	1.82	2.77	1.37	1.70	1.62
Classification Total	24	10.65	4.05	1.82	4.57	12.14	4.48	3.38	4.74	12.86	4.71	4.60	4.88	13.51	4.63	5.26	4.63
Classification by Size	2	1.07	0.74	-0.02	1.04	1.14	0.78	0.29	0.91	1.22	0.77	0.33	0.90	1.31	0.73	0.38	0.84
Classification by Form	6	2.02	1.27	0.55	1.59	2.51	1.48	0.97	1.72	2.69	1.44	1.31	1.78	2.83	1.47	1.53	1.59
Classification by Number	6	1.89	1.28	0.55	1.65	2.25	1.28	0.62	1.82	2.49	1.49	1.06	1.93	2.71	1.52	1.16	1.83
Classification by Function	9	5.22	1.87	0.74	2.24	5.71	2.00	1.49	2.18	5.95	1.91	1.80	2.01	6.14	1.90	1.95	1.91
Puzzles Total	5	1.93	1.37	0.45	1.79	2.10	1.33	0.82	1.61	2.32	1.37	0.87	1.56	2.65	1.41	0.83	1.58
Peabody Raw Score (Pretest only)	80	32.26	11.27			35.90	12.18			37.71	13.39			41.00	11.95		
Peabody Mental Age (Months)	--	40.82	11.84			44.99	14.74			47.82	16.55			51.08	15.87		
Hidden Triangles Total (Posttest)	10	4.30	1.48			4.62	1.55			4.67	1.46			4.76	1.44		
Which Comes First Total (Posttest)	12	4.56	2.35			5.41	2.69			6.44	2.78			7.37	2.85		

FIGURE 1a
Pretest and Total Test Score for All Children
(by viewing quartiles)
N=943

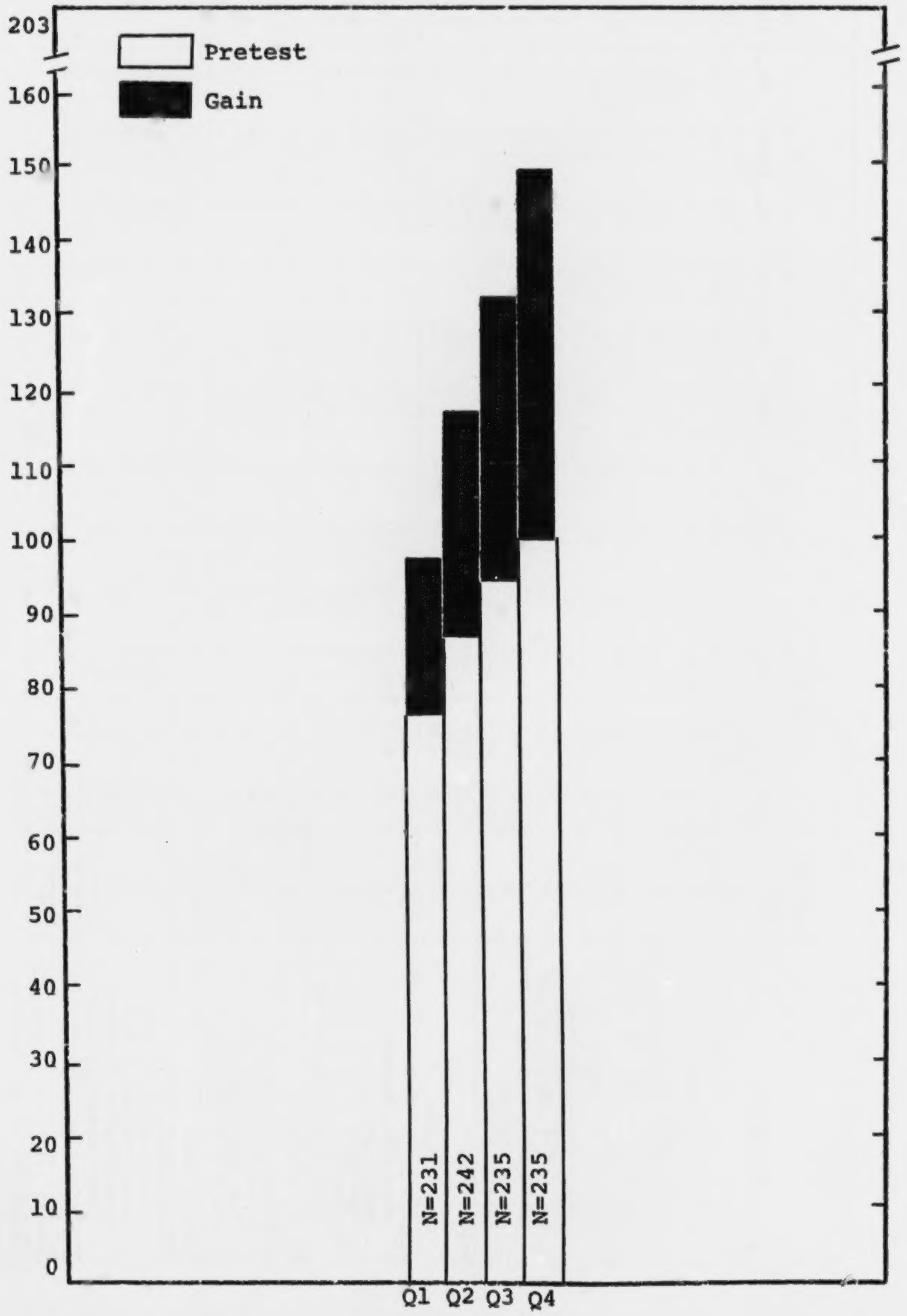


FIGURE 1b

Selected Pretest and Gain Scores for All Children
(by viewing quartiles) Q1=231 Q2=242 Q3=235 Q4=235

Dashed lines beneath test titles indicate maximum possible scores.

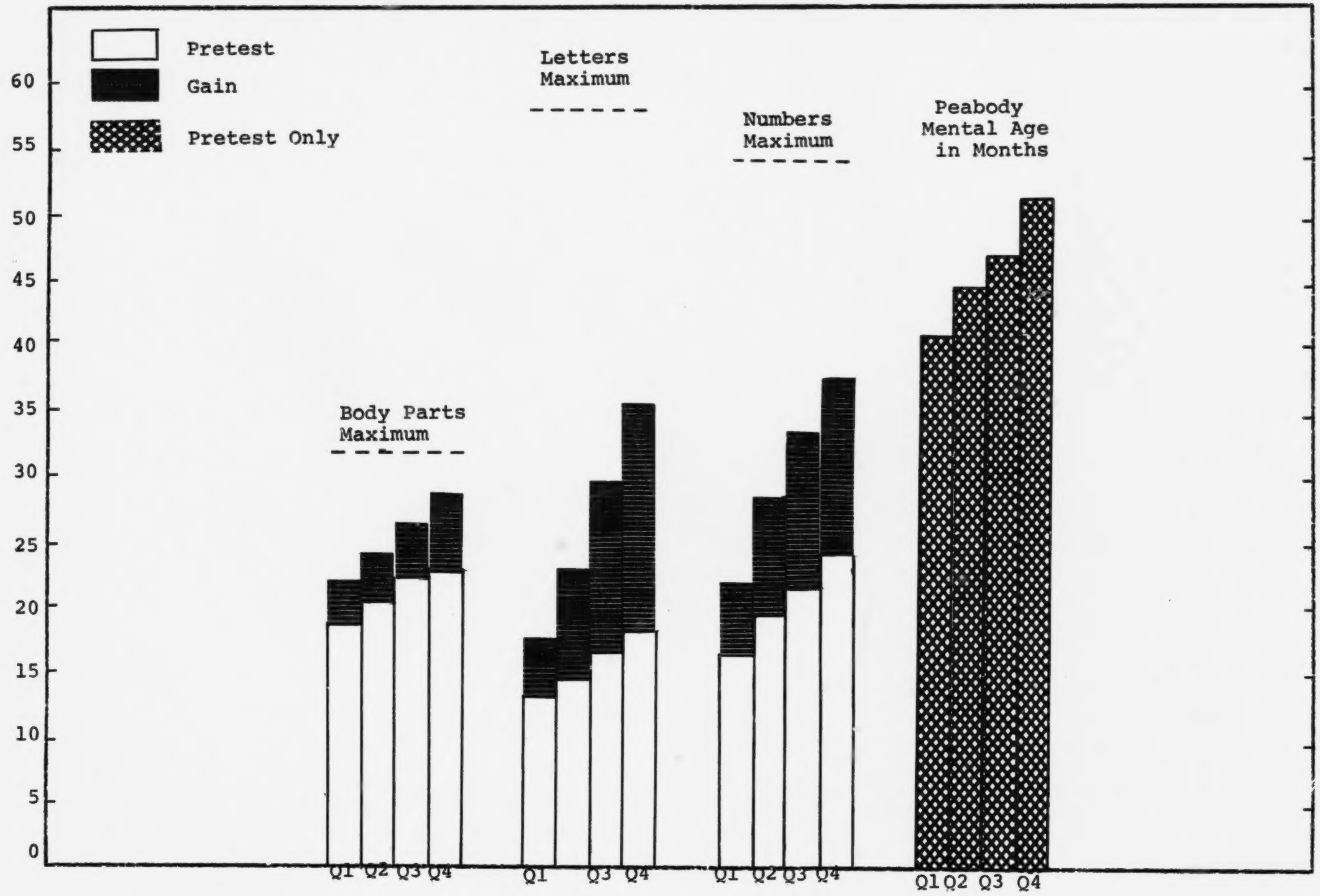


FIGURE 1c

Selected Pretest and Gain Scores for All Children

(by viewing quartiles)   Q1=231   Q2=242   Q3=235   Q4=235

Dashed lines beneath test titles indicate maximum possible scores

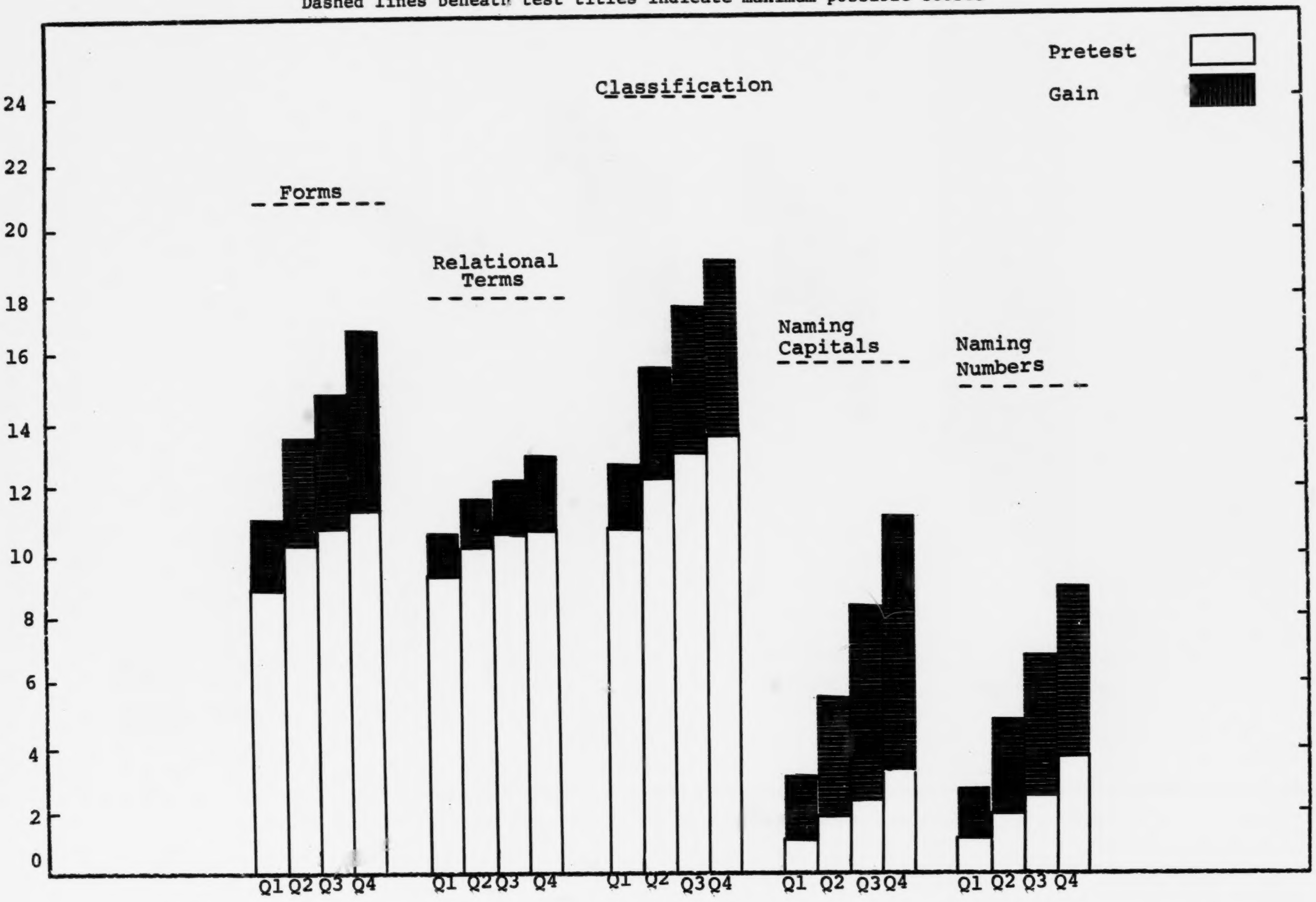


FIGURE 1d

Selected Pretest and Gain Scores for All Children

(by viewing quartiles) Q1=231 Q2=242 Q3=235 Q4=235
Dashed lines beneath test titles indicate maximum possible scores.

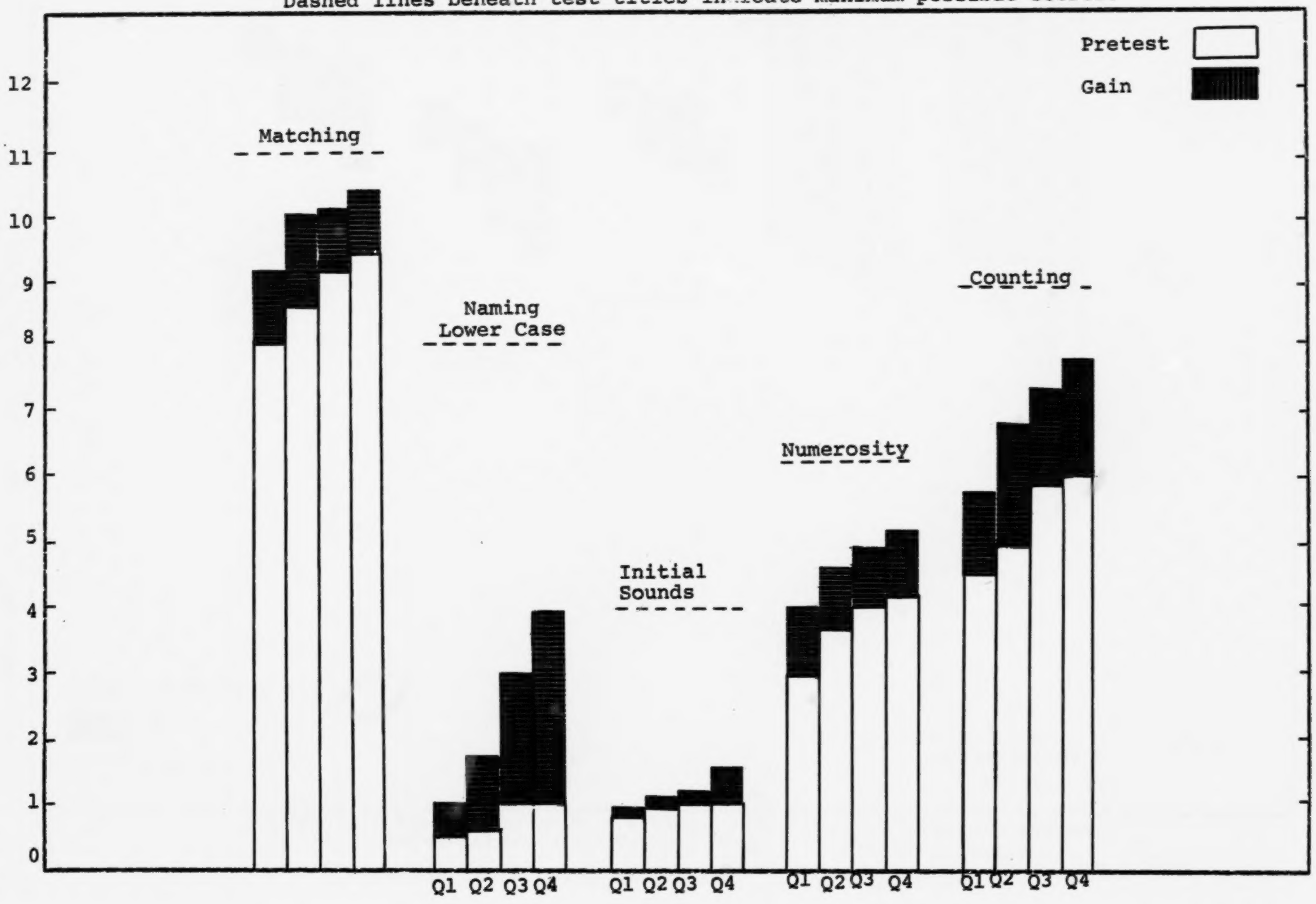
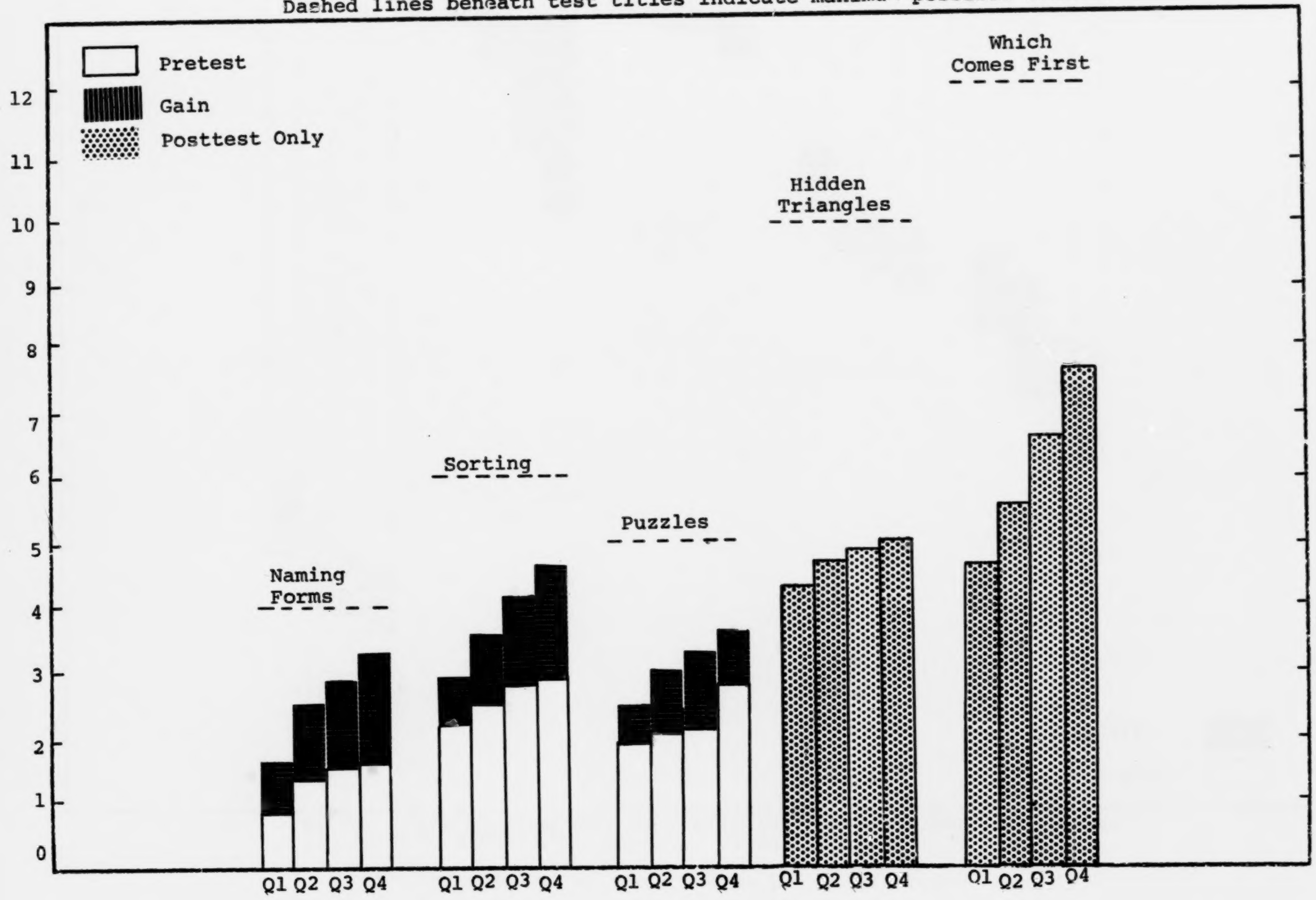


FIGURE 1e

Selected Pretest and Gain Scores for All Children

(by viewing quartiles) Q1=231 Q2=242 Q3=235 Q4=235

Dashed lines beneath test titles indicate maximum possible scores.



Body Parts Test and Subtests

The pretest mean for each quartile was over 50 percent of the maximum possible score for the total test and all subtests. The goals of recognizing and naming body parts and knowledge of their functions may be too simple to be appropriate for some 3- through 5-year-olds, at least with respect to the body parts taught on *Sesame Street*. Table 9 indicates 10 items that were not asked at posttest time because of the very high percentage of children answering them correctly at pretest time. Nevertheless, there was a slight but steady increase in the gains from Q1 through Q4 in Total, Naming, and Function scores even though pretest means were near ceiling in Q4.

Letters Test and Subtests

Some of the more dramatic gains occurred in the goal areas pertaining to letters. A large percentage of time was spent teaching letters, and the gain scores for the total test and for certain subtests showed dramatic increases for children who watched more of the show. The Naming Capital Letters subtest required the child to name each of 16 capital letters shown. An increase of 1 would mean the learning of one letter, an increase of 2 the learning of two letters, etc. As can be seen in Table 10, Q1 children learned an average of 1.52 capital letters, Q2 learned an average of 3.64 letters, Q3 an average of 5.99 letters, and Q4 an average of 7.91 letters.

A look at the individual items in the Naming Capital Letters subtest (see Table 9) shows that for Q4 children the five vowels were among the top 10 letters in terms of gains. From a content analysis done at ETS, it appears that the vowel commercials were televised on more days than were consonants and that they were generally longer. This seems to substantiate the trend that more exposure leads to increased learning. In addition, some of the vowel commercials followed a different format than the consonant commercials and were combined with song (e.g., E-Queen). Additional formative research into this question may aid producers of future commercials.

Steady increases from Q1 through Q4 also occurred in Recognizing Letters (both capital and lower case), Naming Lower Case Letters, Recognizing Letters in Words, and Reading Words. The last two named subtests were not specifically stated goals of CTW and were included in the tests to discover any transfer of learning effects. The fact that both subtests showed steady gains as viewing increased indicates that some transfer of learning did in fact take place. Scores for all quartiles in the Naming Lower Case Letters subtest show that gains were substantial but not as high as those for Capital Letters.

One subscore that did not show steady gains across quartiles was Matching Letters in Words. The subtest showed some ceiling effects at pretest time in all quartiles, and since the test reflected the goal statement the goal may have been inappropriate for this age group. Matching will be discussed further in the Matching subtests part of this section.

The Initial Sounds subtest showed inconsistent gains among quartiles. Both pretest scores and gains were relatively small for all quartiles, although by far the largest gain did occur with Q4 children. A substantial amount of time was spent on this goal in the show, but the skill of identifying initial sounds was usually treated as an incidental part of a commercial designed to teach letter names. A look at individual items (Table 9) shows that two initial sounds did show substantial gains (T and A) and that another (W), which was included only in the posttest, showed large differences among viewing quartiles.

Individual items of the Letters Test (Table 9) not included in any subtest indicate other areas where gains were related to amount of viewing:

a) Knowledge that ABC are called letters and that they are used to read. (Items 13 and 14).

b) Alphabet recitation -- percentages indicate those children who recited the entire alphabet with no mistakes.

	Pretest	Posttest	Gain
Q1	2%	9%	7%
Q2	3	25	22
Q3	5	42	37
Q4	4	55	51

It can be seen that at pretest time about the same percentage of children in each quartile could recite the alphabet and that after Sesame Street, gains increased substantially as viewing increased. A similar picture emerges by looking at the means for the alphabet item at the end of Table 9.

c) Writing child's name. This was not a goal of the show nor could it have been directly taught, but in fact increases occurred in this skill as viewing increased. Percentages indicate those writing their first names with no mistakes or with one or two minor mistakes.

	Pretest	Posttest	Gain
Q1	3%	11%	8%
Q2	6	28	22
Q3	10	40	30
Q4	14	44	30

Forms Test and Subtests

The 20 items in the Forms Test total score included 12 items related to matching, sorting, and classifying forms. These 12 will be discussed within their appropriate subscores. Table 10 shows that in the Naming Forms subtest, gains increased as viewing increased. The same is generally true for the Recognizing Forms subtest. In both these subtests, Q4 children were near ceiling at posttest (means of 3.33 out of four forms recognized and 3.23 out of four forms named), and had substantially achieved the stated goals in these areas.

Numbers Test and Subtests

In total score and almost all subscores of the Numbers Test (see Table 10), gains were greater among those children who watched more. The most substantial gains among Q4 children (as compared with Q1 children) occurred in the Naming and Recognizing Numbers subscores, the areas related to numbers that also received the greatest amount of time on the show. The gains in these subscores may be somewhat understated since one of the six numbers in the Recognizing subtest was over 10 (and the goal was to teach the numbers 1-10), and five of the 15 in the Naming subtest were out of the 1-10 range. Q4 gains in the "transfer area" of numbers beyond the 1-10 range were usually less than those within the range, but Table 9 shows that the gains were still quite substantial in comparison with gains made in lower quartiles. For the numbers 0 (zero) and 11, gains for Q4 children were as large as those for some numbers directly taught.

Gains in Counting also increased with increased viewing, and at posttest time Q4 children were near ceiling (mean of 7.59 for eight items). This subtest required knowledge of numbers 1-10 only, and the posttest mean given above indicates the achievement of the goal as stated. The Addition and Subtraction subtest measured skills not stated in the goals of CTW, but once again gains were associated with amount of viewing.

One of the items not included in the subscores discussed above was recitation of numbers. Item percentages from Table 9 show the following percentages of children in each quartile who recited from 1 to 10 without a mistake.

	Pretest	Posttest	Gain
Q1	27%	55%	28%
Q2	40	72	32
Q3	48	84	36
Q4	57	87	30

Gains were large in all quartiles even though a large number of children in Q2, Q3, and Q4 could count to 10 before viewing Sesame Street. Table 9 also shows the recitation of numbers means for the four quartiles, and at posttest time all were very close to or over 10. These data reinforce CTW's decision to expand this goal area to the number 20 during the second season.

Matching Subtest

The Matching subtest required children to point to the letter, number, or form that matched the stimulus. As can be seen in Table 10, all quartiles performed close to ceiling at pretest time. Gains had been made by all quartiles at posttest time, but the gains did not necessarily increase with amount of viewing. The goal of matching single letters, numbers, and forms is probably inappropriate for most 3- through 5-year-old preschool children because they have already mastered the skill.

The item statistics (Table 9) point out that this ceiling effect did not occur in the matching of words (see items 11 and 12 of the Letters Test). Here too, gains across quartiles did not seem to be related to viewing.

Relational Terms Test and Subtests

In terms of the total test score (see Table 10), gains appear to be related to viewing. The test was divided into three subtests to give an indication of children's performance with different types of relational terms.

a. Items dealing with amount relationships were asked as part of the Numbers Test (see items 25, 27, 29, 30, 31, 38, 39 and 40 in Table 9). Gains increased slightly as viewing increased except between Q2 and Q3. Item analysis indicates that some terms showed substantial gain differences between quartiles 1 and 4.

			Pretest	Posttest	Gain
1)	most (item 10)	Q1	32%	42%	10%
		Q4	40	60	20
2)	same number (item 31)	Q1	22	35	13
		Q4	32	66	34
3)	more (items 39 and 40)	Q1	32	49	19
		Q4	40	69	29

The other items in this subtest either started very close to ceiling or were not specifically taught on the show and showed little if any differences in gains.

b. Size relationships -- both items were near ceiling at pretest and gains seemed unrelated to viewing.

c. Position relationships -- gains in this subscore increased with viewing. Item analyses show greatest gains with the terms over and around.

Two items were added at posttest time to assess the children's knowledge of the terms first and last (see Table 9, Numbers Test). Whereas a majority of all children understood the term first, only about 39 percent understood the term last. These data might influence further attempts to teach sequencing of events.

Sorting Test

Initially, the sorting skills goal was not intended to play a major role in the Sesame Street curriculum. As actually produced, almost two percent of the total time was devoted to the sorting area (see Table 33). Consequently, the six item test was an insufficient measure of the variety of sorting skills taught on the show. However, the Sorting Test scores in Table 10 do indicate that increased gains were highly related to increased amounts of viewing. The item results in Table 9 show that the greatest gains occurred in the items measuring the ability to sort by function (see items 5 and 6 in Sorting Test):

		Pretest	Posttest	Gain
Item 5	Q1	25%	35%	10%
	Q4	23	66	43
Item 6	Q1	13	51	38
	Q4	12	85	73

Very little time was spent teaching sorting by number and two items measured this skill. The results here show increased gains with increased viewing for one (item 3) and inconsistent gains among viewing quartiles for the other (item 4). Whether or not the skill of sorting by number was transferred from the other more numerous examples of sorting by form, size, and function is a matter needing further investigation.

Classification Test and Subtests

Gains on the total score and every subscore in the Classification Test increased monotonically as viewing increased. Even classification by number, which was not treated on the show at all, showed gains increasing as a function of viewing time.

The skill of classification was measured by three types of items (see Table 9). Greatest gains were found in those kinds of items in which the child was asked to explain why the object belonged with the others (see items 6, 8, 11, 13, and 17). In addition, the last item (18) required classification by two characteristics, and the gains again increased as viewing increased. These data seem to indicate that the ability to classify was strongly influenced by viewing.

Puzzles Test

As was mentioned earlier, ideas for both production and test construction in the problem solving area developed slowly and continued into the first few months of the show. Data on the five items common to both pretest and posttest are sufficient only to give a broad idea as to the effectiveness of this goal's treatment. Nonetheless, gains on the total test do seem to be moderately related to viewing.

Hidden Triangles Test

This test of embedded figures was administered to children as a posttest only, so there is no way to obtain gain scores. A look at posttest scores (Table 10) shows a slightly higher mean score as viewing increased. However, the item statistics show inconsistent increases among quartiles, especially with items functioning near the chance level (see Table 9, items 5, 6, 7, and 8). Clearly some of the items were too difficult for these children, and the resulting low test reliability indicates additional investigation is needed to find out if Sesame Street has affected this area.

Which Comes First Test

This test measured the child's ability to sequence events and was administered as a posttest only. Mean scores increased greatly from Q1 through Q4 (see Table 10) and are hence related to viewing quartile, but it is impossible to tell how much of the increase was due to initial differences in children with different viewing habits and how much was due to the effects of viewing. Unfortunately, the absence of pretest scores precludes a comparison of gains here. The test format closely followed the format used to teach the goal on the show, and the mean scores seem to indicate that many children, especially those in Q1 and Q2, did not comprehend this type of problem. (The mean scores in Q1 and Q2 were just slightly above the chance level of 4.0.)

The item analyses in Table 9 show that children were often better able to locate the first picture in a sequence than the last picture. In addition, they found it easier to sequence events that were more familiar to them (e.g., drinking from a straw -- item 7).

In general, the preceding analyses reveal information that should be very useful for many groups interested in preschool-aged children -- for example, educators, researchers, producers of children's television shows. The pretest results provide base line data on preschool children. Educators make many assumptions about what children can do and understand -- and sometimes they are wrong. The children in this extensive sample knew the meaning of "first" but were much less sure of the meaning of "last," yet initially Sesame Street producers were not aware of this potential problem when teaching sequencing of events.

The item level data are the basis of all subsequent analyses. A mass of means, standard deviations, and F tests will be presented in the following pages but they are all based on the scores generated from items. Thus, the item level data may be regarded as a seminal source to help interpretation of more sophisticated data presentations; and they may also be used to generate new and different analyses of the reader's own choosing.

Finally, it should be noted that a number of items -- for example, reciting the alphabet, writing own name -- do not fit into subsequently reported tests and subtests. Thus, only here can the effect of Sesame Street on those areas be seen.

The next eight sections of Part A of the results chapter will present data relevant to specific subgroupings of the total sample.

2. All Disadvantaged Children

Perhaps the prime raison d'etre of Children's Television Workshop and its product, Sesame Street, was to aid disadvantaged children. Of the 943 children under consideration here, 169 were from middle class suburban Philadelphia and 43 were Spanish-speaking children. These two groups will be considered separately. In this section, the results for the remaining 731 children, all from disadvantaged backgrounds, will be studied. Then, in the parts immediately following, these 731 children will be subdivided by age, by sex, and by an at-home, at-school breakdown which includes the initial breakdown of encouraged vs. not-encouraged groups.

Table 11 presents the mean pretest and gain scores for all disadvantaged children, except Spanish speakers. Figures 2a-e present the pretest and gain score means graphically. The following are some observations based on these data:

-- Disadvantaged children as a subgroup, compared with the total sample which included advantaged children, watched Sesame Street somewhat less, tending to be disproportionately highly clustered in the low viewing quartiles (which were based on the total sample).

-- Amount of viewing affected gains on Grand Total scores (all 203 common items) by considerable amounts (gains were -- Q1=18.63, Q2=29.11, Q3=37.97, Q4=47.36).

-- In every case among the eight total test scores, gains were larger as amount of viewing increased.

-- The relationship between gain and amount of viewing was least evident in the Body Parts Test. However, there was a probable

TABLE 11

Pretest and Gain Scores for All Disadvantaged Children

(by quartiles)

N = 731

Test & Subtest	Maximum Possible Score	Q_1 N=198				Q_2 N=197				Q_3 N=172				Q_4 N=164			
		Pretest		Gain		Pretest		Gain		Pretest		Gain		Pretest		Gain	
		Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Grand Total	203	75.62	24.73	18.63	20.04	84.42	27.60	29.11	22.51	87.74	27.63	37.97	25.29	97.54	32.16	47.36	26.15
Body Parts Total	32	18.11	6.51	3.88	5.71	20.00	6.35	4.38	5.50	21.09	6.04	4.74	5.31	22.47	6.05	5.24	4.88
Pointing to Body Parts	5	3.07	1.40	0.71	1.38	3.51	1.34	0.59	1.21	3.69	1.15	0.51	1.22	3.88	1.14	0.69	1.05
Naming Body Parts	15	8.24	2.92	1.36	2.67	9.28	2.95	1.40	2.69	9.70	2.53	1.68	2.49	10.37	2.44	1.79	2.27
Function of Body Parts (Point)	8	4.77	2.39	1.10	2.64	4.94	2.29	1.53	2.31	5.34	2.13	1.56	2.17	5.48	2.30	-1.87	2.06
Function of Body Parts (Verbal)	4	2.03	1.55	0.72	1.72	2.27	1.43	0.85	1.53	2.35	1.54	0.99	1.53	2.74	1.48	0.89	1.35
Letters Total	58	13.07	5.95	4.30	7.43	14.42	7.37	8.22	9.26	14.95	7.00	11.89	11.00	17.98	10.12	15.97	11.19
Recognizing Letters	8	2.26	1.67	0.65	2.31	2.38	1.89	1.37	2.41	2.50	1.84	2.06	2.55	3.04	2.12	2.56	2.62
Naming Capital Letters	16	1.24	2.36	1.35	3.44	1.47	3.25	3.31	4.90	1.49	3.02	5.17	5.15	2.85	4.53	7.25	5.64
Naming Lower Case Letters	8	0.47	1.06	0.37	1.63	0.63	1.42	1.02	2.30	0.44	1.09	1.91	2.42	1.00	1.89	2.60	2.68
Matching Letters in Words	4	2.81	1.21	0.65	1.21	3.03	1.22	0.72	1.18	3.13	1.16	0.67	1.08	3.24	1.07	0.65	1.11
Recognizing Letters in Words	4	1.34	1.11	0.31	1.40	1.36	1.07	0.58	1.38	1.35	1.08	0.82	1.55	1.49	1.20	1.16	1.53
Initial Sounds	4	0.68	0.74	0.14	1.08	0.80	0.76	0.19	1.16	0.94	0.81	0.15	1.21	0.89	0.81	0.30	1.16
Reading Words	6	0.02	0.16	0.02	0.28	0.06	0.49	0.05	0.55	0.03	0.20	0.18	0.60	0.12	0.59	0.37	0.75
Forms Total	20	8.43	3.50	2.29	3.77	9.89	4.01	3.15	4.05	10.04	3.64	4.29	4.07	10.64	3.50	5.49	3.52
Recognizing Forms	4	1.96	1.20	0.41	1.64	2.16	1.20	0.38	1.62	2.12	1.26	0.69	1.72	2.13	1.15	1.10	1.52
Naming Forms	4	0.87	1.08	0.64	1.29	1.34	1.31	0.86	1.43	1.29	1.22	1.28	1.43	1.39	1.27	1.83	1.34
Numbers Total	54	16.18	8.20	5.43	7.05	18.56	9.38	8.52	8.23	19.64	10.10	10.88	9.51	23.69	11.15	13.01	9.52
Recognizing Numbers	6	1.64	1.40	0.60	1.71	1.76	1.52	1.26	1.91	1.77	1.52	1.67	2.10	2.38	1.87	1.78	2.11
Naming Numbers	15	1.12	2.58	1.13	2.96	1.57	2.95	2.43	3.96	1.56	3.07	3.74	4.01	3.09	4.04	5.15	4.44
Numerosity	6	2.93	1.50	0.92	1.68	3.47	1.72	0.92	1.69	3.59	1.72	0.97	1.79	4.05	1.72	1.11	1.56
Counting	9	4.35	2.51	1.24	2.34	4.74	2.62	1.81	2.38	5.22	2.56	1.79	2.53	5.72	2.50	1.74	2.41
Addition and Subtraction	7	1.30	1.29	0.64	1.56	1.64	1.61	0.72	1.53	1.93	1.78	0.76	1.84	2.13	1.82	1.04	1.79
Matching Subtest	11	7.83	2.76	1.26	2.87	8.38	2.55	1.50	2.50	8.90	2.19	1.12	2.09	9.32	1.77	1.02	1.82
Relational Terms Total	17	9.07	2.98	1.11	3.18	9.88	3.06	1.52	3.34	10.08	2.77	1.80	2.93	10.15	3.13	2.47	3.34
Amount Relationships	9	4.37	1.73	0.63	2.04	4.52	1.99	0.93	2.34	4.64	1.90	1.00	2.21	4.73	1.95	1.23	2.22
Size Relationships	2	1.64	0.58	0.09	0.70	1.75	0.46	0.13	0.54	1.73	0.49	0.19	0.51	1.73	0.46	0.18	0.51
Position Relationships	5	2.69	1.46	0.27	1.68	3.10	1.34	0.39	1.63	3.19	1.28	0.52	1.39	3.24	1.33	0.80	1.50
Sorting Total	6	2.30	1.33	0.47	1.85	2.54	1.44	0.81	1.82	2.52	1.50	1.38	1.76	2.73	1.39	1.64	1.71
Classification Total	24	10.57	4.15	1.67	4.41	11.98	4.63	2.96	4.78	12.06	4.68	4.56	4.97	12.88	4.60	5.32	4.67
Classification by Size	2	1.08	0.74	0.08	1.03	1.10	0.78	0.27	0.95	1.13	0.78	0.32	0.92	1.20	0.74	0.43	0.85
Classification by Form	6	1.98	1.26	0.51	1.53	2.45	1.48	0.87	1.70	2.53	1.44	1.22	1.84	2.69	1.45	1.48	1.58
Classification by Number	6	1.87	1.29	0.49	1.65	2.26	1.31	0.48	1.78	2.28	1.47	1.00	1.82	2.64	1.52	1.11	1.85
Classification by Function	9	5.19	1.95	0.75	2.27	5.65	2.04	1.34	2.20	5.63	1.94	1.90	2.17	5.88	1.91	2.02	1.95
Puzzles Total	5	1.88	1.40	0.43	1.86	2.04	1.37	0.80	1.64	2.15	1.28	0.83	1.58	2.41	1.45	0.98	1.57
Peabody Raw Score (Pretest only)	80																
Peabody Mental Age (Months)	--																
Hidden Triangles Total (Posttest)	10																
Which Comes First Total (Posttest)	12																

ceiling effect on this 32 item test as evidenced by the Q4 posttest mean of 27.7.

-- The Letters Test showed large and increasing gains moving across viewing quartiles from low to high. Each of the subtests contributed to this. While there seemed to be some confounding in that amount of viewing and pretest scores were positively correlated (the more the viewing, the higher the pretest score), not all mean pretest scores rose across viewing quartiles. For example, in the 16 item Naming Capital Letters subtest of the Letters Test, Q2 and Q3 pretest means were essentially the same but the Q2 gain of 3.31 was less than the Q3 gain of 5.17.

-- All the other major goal areas showed the same general phenomenon described above with respect to the Letters Test. That is, there was a steadily higher gain when amount of viewing was greater. There was also usually a higher pretest score for the higher viewing groups, though even when this was not so the extra gains of the higher viewing groups insured that the bar graphs of the posttest scores took on the characteristic step-wise progression to be seen in Figures 2a-e.

-- The overall effect seemed to be quite similar to that noted when all 943 children were under consideration, which is not surprising considering the extent of the overlap between this group of 731 and the total group.

In Section C below, the scores of the 731 disadvantaged children will be analyzed statistically by multivariate analyses of variance.

Before that presentation, a number of descriptions will be made both of subgroupings within the 731 subjects and of other groupings. Clearly it would be wiser to delay further interpretive comments and conclusions until the more systematic analysis has been conducted. However, the trend, in terms of gains, seems to indicate a very positive effect as a function of amount of viewing.

Figure 2a
Pretest and Gain on Total Test Score for All Disadvantaged Children
(by viewing quartiles)
N=731

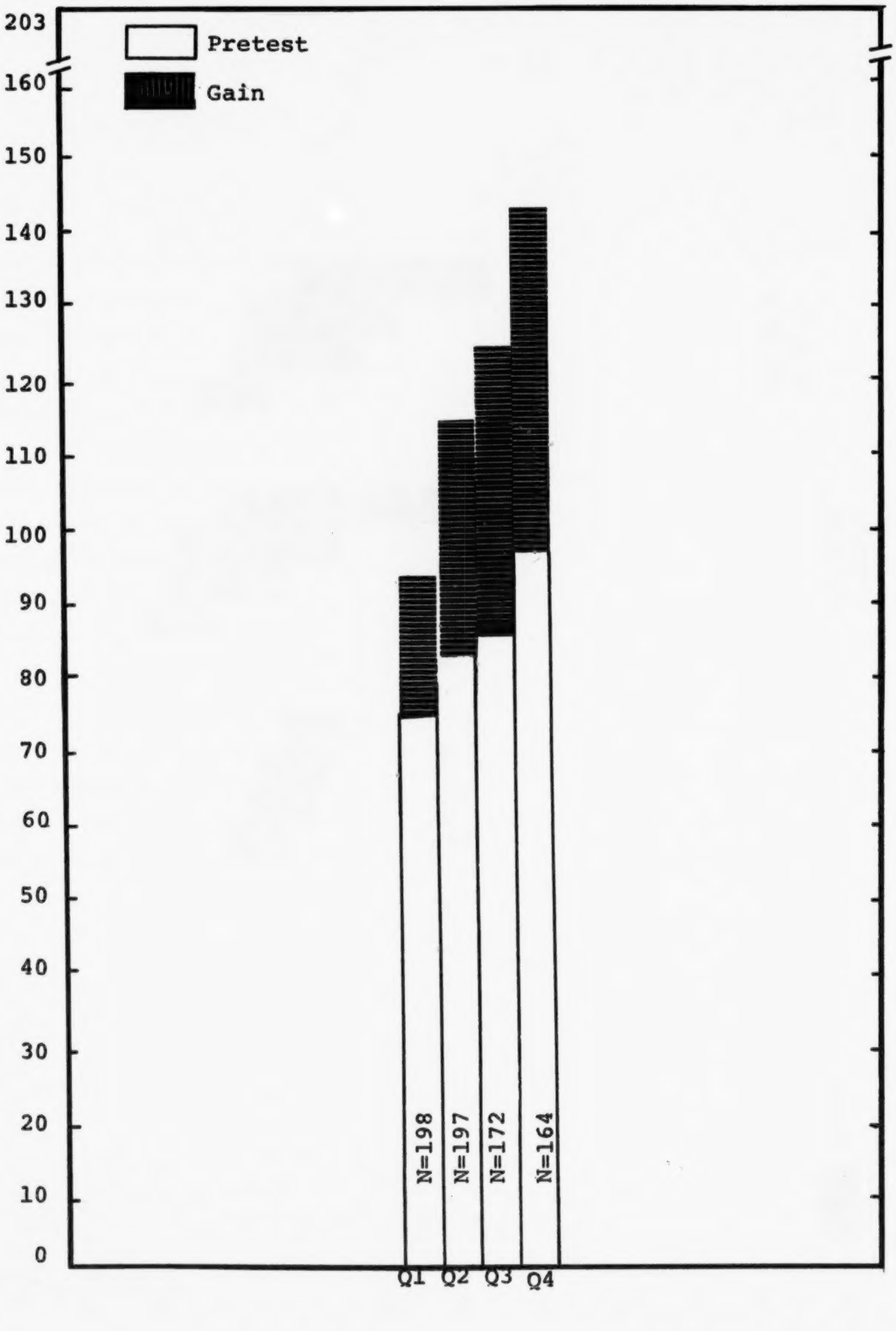


FIGURE 2b

Selected Pretest and Gain Scores for All Disadvantaged Children

(by viewing quartiles) Q1=198 Q2=197 Q3=172 Q4=164
Dashed lines beneath test titles indicate maximum possible scores.

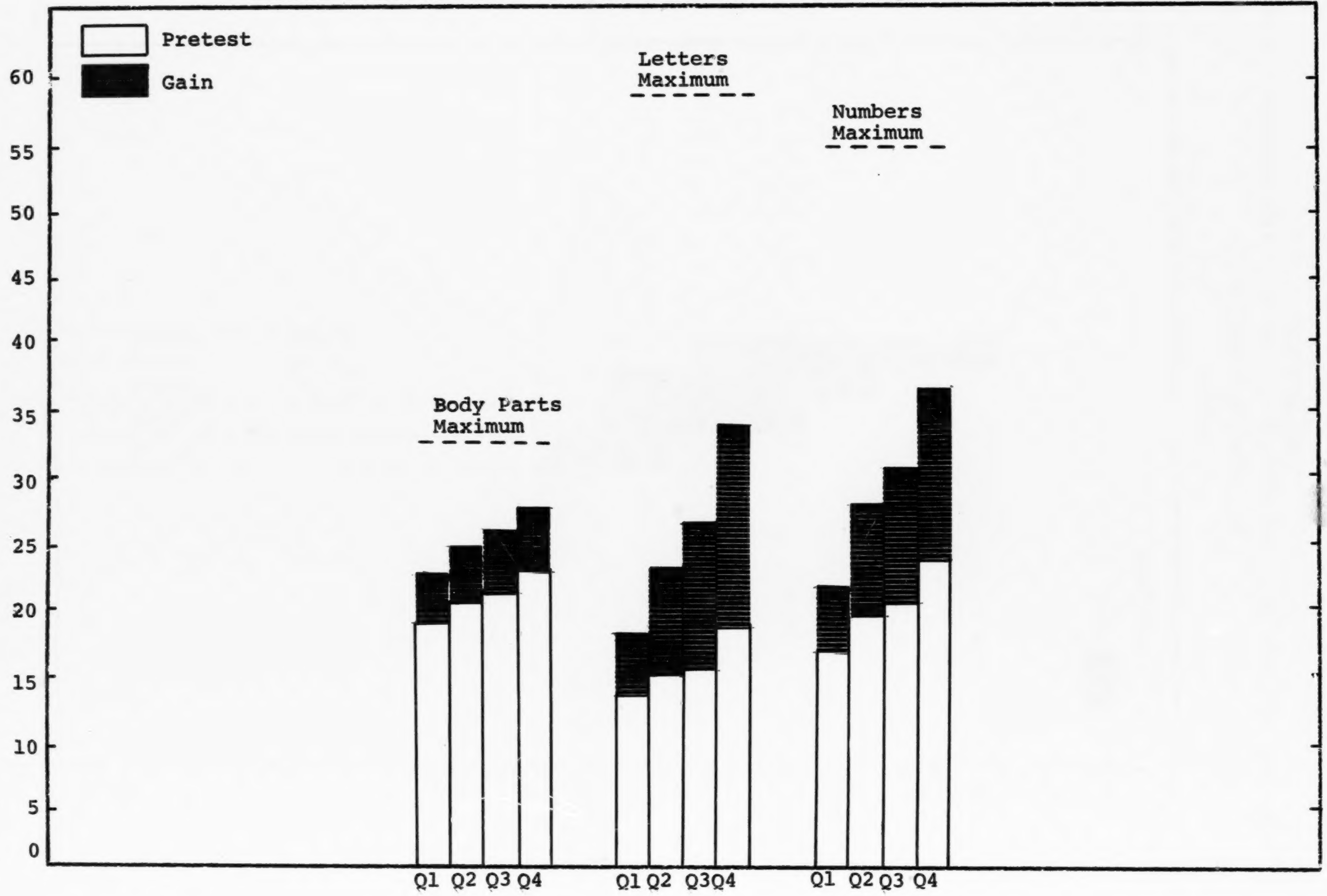


FIGURE 2c

Selected Pretest and Gain Scores for All Disadvantaged Children

(by viewing quartiles) Q1=198 Q2=197 Q3=172 Q4=164
Dashed lines beneath test titles indicate maximum possible scores.

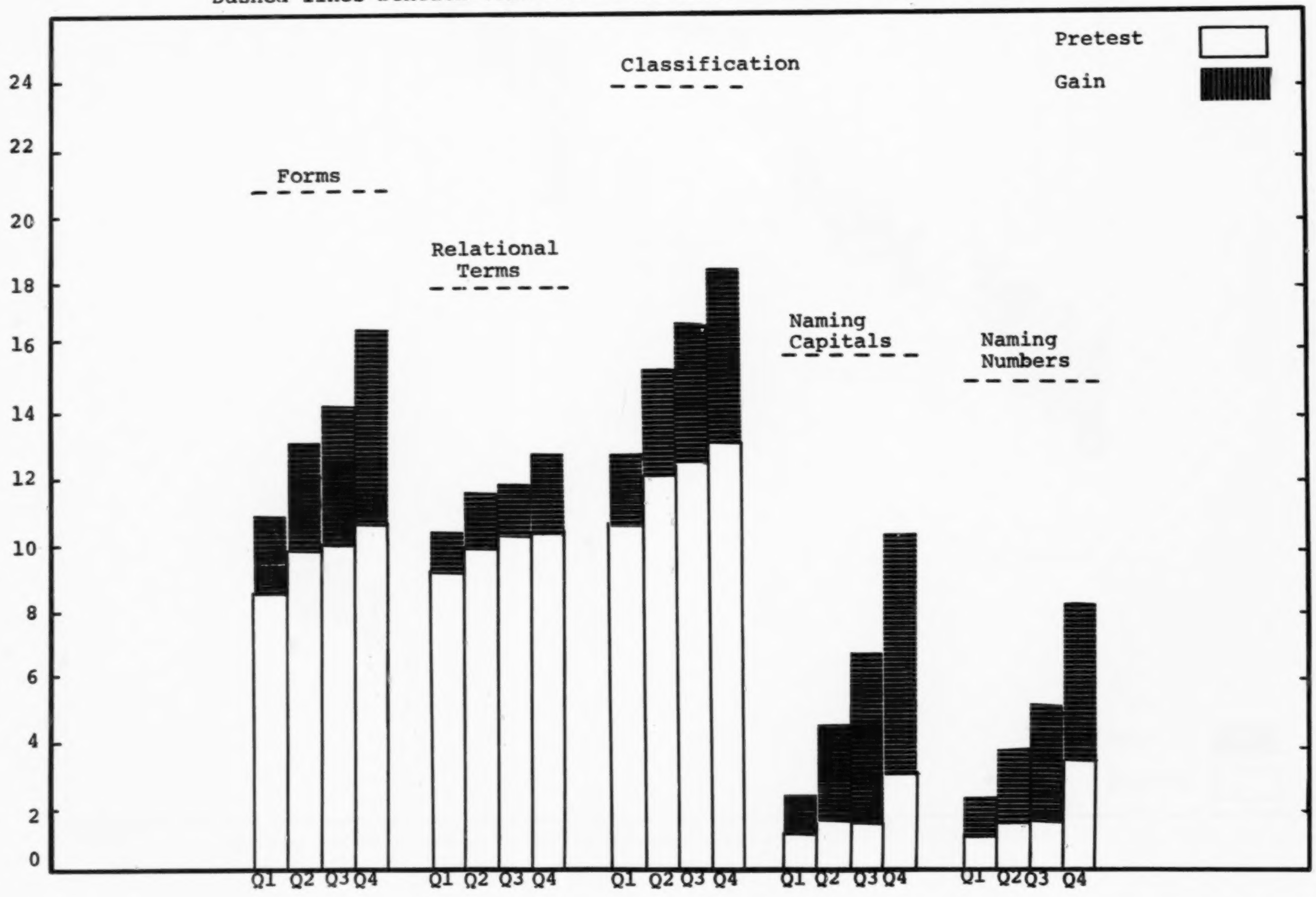


FIGURE 2d

Selected Pretest and Gain Scores for All Disadvantaged Children
(by viewing quartiles) Q1=198 Q2=197 Q3=172 Q4=164

Dashed lines beneath test titles indicate maximum possible scores.

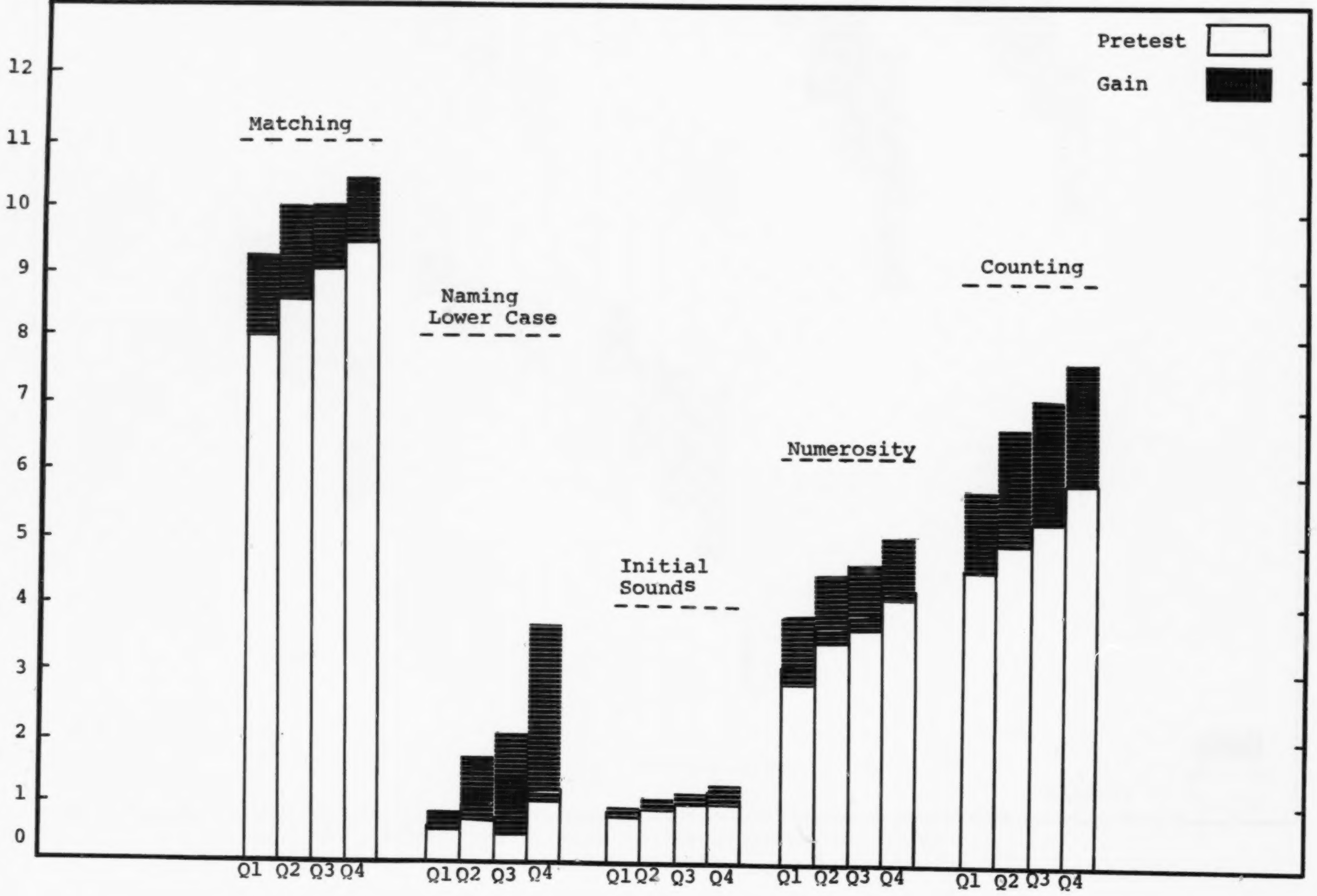
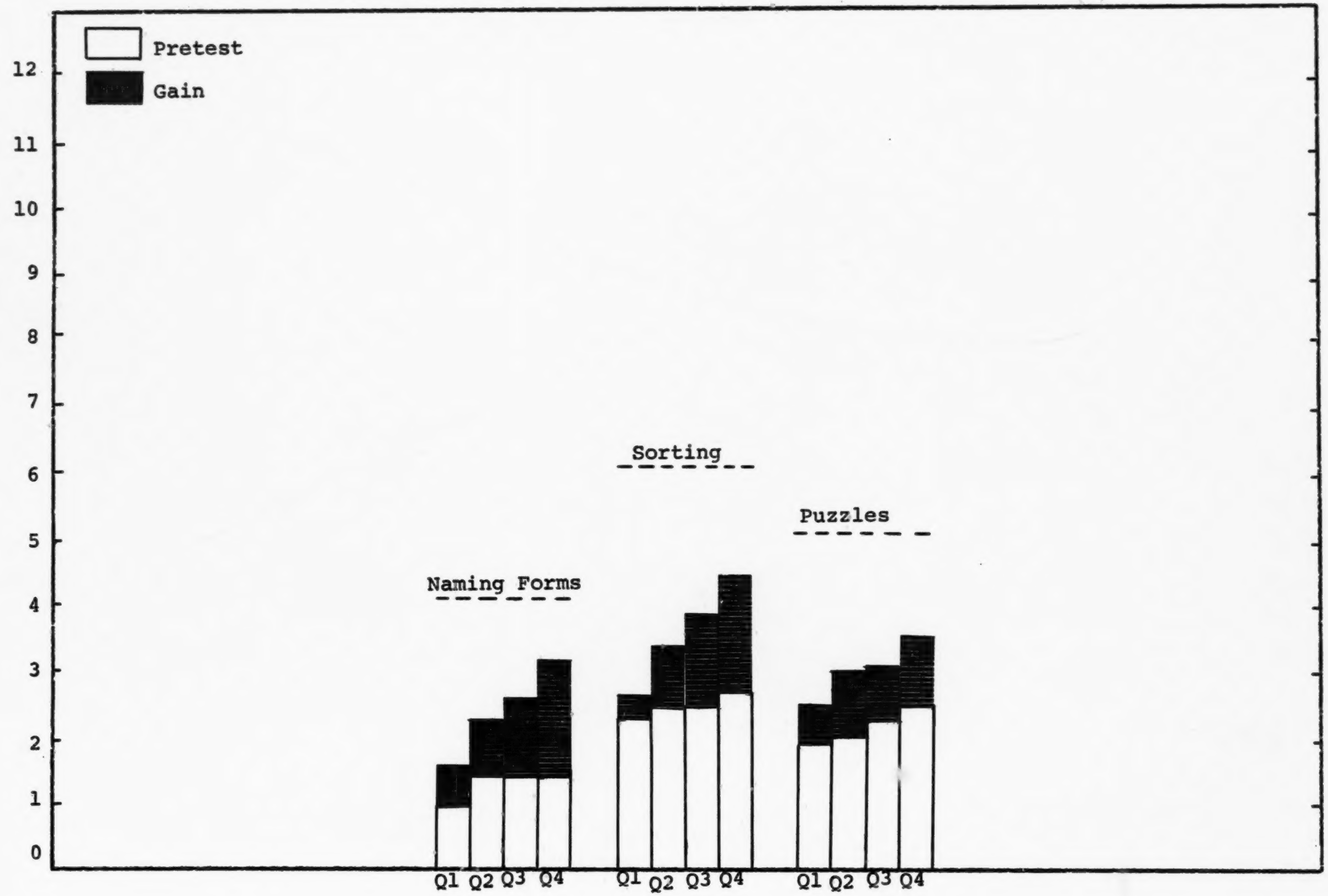


FIGURE 2e

Selected Pretest and Gain Scores for All Disadvantaged Children
(by viewing quartiles) Q1=198 Q2=197 Q3=172 Q4=164
Dashed lines beneath test titles indicate maximum possible scores.



3. The Disadvantaged Children Subdivided by Age -- 3-, 4-, and 5-Year Olds

While Sesame Street was aimed primarily at 3- through 5-year-old children, the central target was the 4-year-old. Therefore, in the sampling, a disproportionate number of 4-year-olds was obtained. Three- and 5-year-olds were sampled mainly in Boston and Durham. Tables 12a-c and Figures 3a-m present data on the performance of the children in each of the three age groups.

The definitions of age were presented in Table 1 (see Chapter 2). Those labeled 3-year-olds ranged from 2 years 9 months to 3 years 8 months at pretest and averaged 3 years 6 months in the middle of the Sesame Street season. Similarly those labeled 4-year-olds averaged 4 years 6 months at mid-season and the 5-year-olds averaged 5 years 6 months. There were 127 3-year-olds, 433 4-year-olds, and 159 5-year-olds. Twelve disadvantaged children were either outside the defined age range or their exact age, though between 3 and 5, could not be properly determined.

Again, a number of interpretive comments will be offered at this point and further statistical tests will be reported later in Section C of this chapter.

-- For each age group, the numbers of children in each viewing quartile were about the same. Fifty percent of the disadvantaged 5-year-olds were in Q3 and Q4, as were 43 percent of the 4-year-olds, and 44 percent of the 3-year-olds. Age seemed not to affect markedly amount of viewing. The most striking difference was among 4-year-olds where there were 127 low viewers (Q1) and only 82 in the highest viewing quartile (Q4).

-- As expected, at pretest the 3-year-olds did less well than the 4-year-olds, who, in turn, did less well than the 5-year-olds. However, the younger children seemed to be as capable

TABLE 12a

Pretest and Gain Scores for All Disadvantaged 3-Year-Old Children

(by quartiles)

N = 127

Test & Subtest	Maximum Possible Score	Q_1 N=33				Q_2 N=38				Q_3 N=25				Q_4 N=31			
		Pretest		Gain		Pretest		Gain		Pretest		Gain		Pretest		Gain	
		Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Grand Total	203	60.76	20.34	12.42	25.67	62.42	20.82	30.71	21.14	65.48	15.76	37.20	28.28	75.81	25.14	57.23	25.66
Body Parts Total	32	13.88	5.21	3.03	6.26	15.76	5.77	4.79	5.91	16.72	5.44	6.64	6.94	18.84	6.26	8.00	5.52
Pointing to Body Parts	5	2.55	1.39	0.39	1.30	2.58	1.35	0.82	1.54	2.88	1.30	0.92	1.32	3.44	1.27	1.00	1.15
Naming Body Parts	15	6.85	2.50	1.18	2.72	7.87	3.03	1.13	2.88	8.52	2.38	1.68	3.59	9.53	2.49	2.32	2.63
Function of Body Parts (Point)	8	3.27	2.36	1.00	3.46	3.92	2.28	1.66	2.58	3.72	2.01	2.64	2.20	4.09	2.36	3.00	2.24
Function of Body Parts (Verbal)	4	1.21	1.47	0.45	2.11	1.39	1.41	1.18	1.86	1.60	1.55	1.40	1.71	1.78	1.60	1.68	1.66
Letters Total	58	10.73	5.99	3.79	9.20	10.18	4.95	7.53	8.99	11.32	3.99	10.52	9.71	11.91	6.65	20.13	12.14
Recognizing Letters	8	2.06	1.95	0.82	2.69	1.47	1.66	1.45	2.23	2.28	1.59	1.32	2.53	1.63	1.58	3.74	2.65
Naming Capital Letters	16	1.03	2.51	0.55	4.04	0.58	2.61	2.03	5.06	0.40	1.00	4.36	4.39	1.00	2.78	8.90	6.38
Naming Lower Case Letters	8	0.33	1.41	0.18	1.94	0.37	1.38	0.45	2.30	0.12	0.33	1.36	2.08	0.44	1.46	2.77	2.80
Matching Letters in Words	4	2.12	1.22	1.00	1.27	2.45	1.50	0.92	1.60	2.32	1.55	1.12	1.56	2.59	1.36	1.23	1.52
Recognizing Letters in Words	4	1.03	0.98	0.36	1.27	1.05	1.01	0.79	1.21	1.08	1.08	0.84	1.72	1.00	1.02	1.55	1.46
Initial Sounds	4	0.48	0.62	0.21	0.99	0.68	0.70	0.16	1.13	1.04	1.02	-0.16	1.21	0.81	0.82	0.03	1.14
Reading Words	6	0.06	0.35	-0.06	0.35	0.00	0.00	0.03	0.16	0.00	0.00	0.08	0.40	0.00	0.00	0.19	0.40
Forms Total	20	7.70	3.16	1.03	3.83	7.84	3.90	3.39	3.96	7.36	2.81	5.00	4.25	9.13	3.50	6.29	3.59
Recognizing Forms	4	2.24	1.09	-0.18	1.57	1.84	1.26	0.47	1.81	1.80	1.41	0.60	1.50	1.97	1.12	1.23	1.54
Naming Forms	4	0.52	1.00	0.30	1.55	0.84	1.05	1.03	1.37	0.52	0.82	1.76	1.13	1.22	1.43	2.26	1.55
Numbers Total	54	11.21	6.40	2.94	9.34	11.37	6.08	9.34	7.53	13.00	5.39	8.08	10.02	16.38	8.39	14.13	9.79
Recognizing Numbers	6	0.91	1.04	0.76	1.94	1.03	1.24	1.58	2.18	1.08	1.12	1.12	2.03	1.47	1.44	2.03	2.26
Naming Numbers	15	0.42	1.92	0.21	2.64	0.45	1.50	1.63	3.36	0.16	0.37	2.64	3.04	1.25	2.46	5.16	5.41
Numerosity	6	2.24	1.30	0.45	1.82	2.53	1.69	0.74	1.91	3.20	1.76	0.44	2.06	3.28	1.82	1.26	1.53
Counting	9	3.09	2.23	0.82	2.88	3.13	2.56	2.32	2.70	3.32	1.93	2.32	3.24	4.41	2.45	1.81	2.43
Addition and Subtraction	7	0.85	1.20	0.09	1.53	0.71	0.98	0.61	1.31	0.88	0.93	0.60	1.38	0.94	1.24	1.10	1.14
Matching Subtest	11	6.94	2.70	0.94	3.43	6.53	3.33	3.05	3.04	7.00	2.68	2.40	2.72	8.25	2.53	2.03	2.74
Relational Terms Total	17	7.42	2.46	1.39	3.55	8.45	3.13	1.79	3.46	8.24	2.62	1.76	3.44	8.72	2.39	3.23	2.70
Amount Relationships	9	3.70	1.72	0.88	2.23	3.61	2.40	1.32	2.80	3.52	1.56	1.04	2.32	3.75	1.46	1.42	1.67
Size Relationships	2	1.42	0.56	0.03	0.88	1.74	0.45	0.16	0.49	1.64	0.49	0.24	0.52	1.72	0.52	0.23	0.62
Position Relationships	5	2.03	1.42	0.24	1.90	2.76	1.50	0.13	1.79	2.80	1.35	0.24	1.59	2.88	1.31	1.23	1.54
Sorting Total	6	2.33	1.29	-0.12	1.73	2.21	1.36	0.42	1.73	2.44	1.26	0.92	1.85	2.41	1.10	1.52	1.59
Classification Total	24	8.67	3.53	1.27	3.59	8.50	4.43	4.53	4.69	9.12	3.48	4.44	4.81	10.56	4.66	5.71	3.68
Classification by Size	2	0.94	0.61	-0.18	0.81	0.50	0.60	0.68	0.96	0.68	0.75	0.44	0.92	0.97	0.78	0.39	0.88
Classification by Form	6	1.67	1.22	0.33	1.41	1.84	1.64	0.84	1.81	2.08	1.22	0.80	1.76	2.00	1.37	1.48	1.31
Classification by Number	6	1.18	1.07	0.61	1.78	1.45	0.95	0.87	1.28	1.84	1.11	0.44	1.71	2.16	1.42	1.19	1.94
Classification by Function	9	4.36	1.95	0.76	2.21	4.24	2.48	2.18	2.82	4.20	1.55	2.60	1.98	5.03	1.99	2.35	1.43
Puzzles Total	5	1.76	1.28	0.21	1.85	1.63	1.10	0.45	1.43	1.28	1.02	1.24	1.48	2.03	1.49	1.19	1.60
Peabody Raw Score (Pretest only)	80	21.09	7.53			22.42	7.77			24.68	9.38			31.84	11.14		
Peabody Mental Age (Months)	--	31.12	5.53			31.39	7.22			33.92	7.88			40.31	12.61		
Hidden Triangles Total (Posttest)	10	3.36	1.69			4.11	1.66			4.15	1.46			4.77	1.52		
Which Comes First Total (Posttest)	12	4.36	2.16			4.46	2.09			5.15	2.17			5.94	2.35		

TABLE 12b

Pretest and Gain Scores for All Disadvantaged 4-Year-Old Children

(by quartiles)

N = 433

Test & Subtest	Maximum Possible Score	Q1 N=127 Pretest		Q1 Gain		Q2 N=119 Pretest		Q2 Gain		Q3 N=105 Pretest		Q3 Gain		Q4 N=82 Pretest		Q4 Gain	
		Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Grand Total	203	75.13	22.21	18.24	18.40	84.09	23.25	30.60	24.35	86.63	23.64	38.50	25.44	93.79	29.50	49.01	24.62
Body Parts Total	32	18.35	6.22	4.09	5.31	20.08	6.22	4.92	5.47	21.14	5.85	4.64	5.19	22.27	5.75	5.10	4.50
Pointing to Body Parts	5	3.13	1.37	0.75	1.37	3.56	1.30	0.66	1.23	3.74	1.11	0.52	1.23	3.89	1.12	0.65	1.02
Naming Body Parts	15	8.18	2.86	1.51	2.52	9.33	2.97	1.68	2.82	9.74	2.52	1.70	2.43	10.13	2.32	1.77	2.09
Function of Body Parts (Point)	8	4.89	2.2[illegible]	1.09	2.52	4.88	2.18	1.74	2.13	5.42	1.95	1.40	1.99	5.48	2.21	1.85	1.97
Function of Body Parts (Verbal)	4	2.15	1.52	0.74	1.66	2.32	1.36	0.83	1.47	2.25	1.54	1.02	1.63	2.77	1.47	0.83	1.24
Letters Total	58	13.20	5.92	3.45	6.37	13.94	6.08	8.46	9.17	14.56	5.67	12.02	11.17	17.33	8.84	15.37	10.45
Recognizing Letters	8	2.26	1.62	0.48	2.26	2.25	1.76	1.40	2.32	2.33	1.67	2.28	2.52	2.94	1.87	2.43	2.33
Naming Capital Letters	16	1.17	2.32	1.09	2.90	1.25	2.63	3.40	4.76	1.34	2.64	5.17	5.34	2.58	4.39	7.07	5.58
Naming Lower Case Letters	8	0.50	1.01	0.16	1.20	0.52	1.08	1.11	2.18	0.41	0.89	1.90	2.46	0.76	1.63	2.40	2.54
Matching Letters in Words	4	2.91	1.15	0.56	1.18	3.04	1.16	0.82	1.07	3.19	1.02	0.65	1.01	3.30	0.98	0.65	0.96
Recognizing Letters in Words	4	1.35	1.14	0.29	1.41	1.43	1.04	0.44	1.45	1.42	1.09	0.76	1.41	1.46	1.13	1.13	1.46
Initial Sounds	4	0.70	0.78	0.09	1.11	0.73	0.70	0.29	1.15	0.81	0.72	0.24	1.23	0.87	0.74	0.30	1.09
Reading Words	6	0.0	0.0	0.04	0.29	0.08	0.57	-0.02	0.61	0.03	0.17	0.07	0.37	0.07	0.56	0.30	0.78
Forms Total	20	8.21	3.42	2.55	3.82	9.87	3.67	3.31	4.40	9.94	3.59	4.32	4.13	10.38	3.39	5.63	3.72
Recognizing Forms	4	1.83	1.22	0.58	1.61	2.12	1.14	0.50	1.67	2.13	1.23	0.64	1.77	2.23	1.20	0.95	1.57
Naming Forms	4	0.88	1.05	0.77	1.24	1.36	1.30	0.86	1.60	1.35	1.24	1.17	1.42	1.24	1.23	1.94	1.30
Numbers Total	54	15.82	6.89	5.69	6.32	18.72	7.96	8.84	8.83	19.08	8.85	11.37	9.81	21.95	10.43	14.65	8.65
Recognizing Numbers	6	1.66	1.38	0.53	1.68	1.82	1.44	1.29	1.93	1.76	1.42	1.57	2.07	2.20	1.76	1.88	1.91
Naming Numbers	15	1.06	2.35	0.98	2.85	1.60	2.91	2.49	4.33	1.29	2.51	3.85	4.15	2.70	3.80	5.33	4.01
Numerosity	6	2.88	1.38	0.98	1.6[illegible]	3.43	1.53	1.11	1.64	3.56	1.72	1.12	1.92	3.79	1.76	1.33	1.59
Counting	9	4.21	2.38	1.51	2.18	4.79	2.42	1.85	2.37	5.16	2.55	1.86	2.63	5.37	2.52	2.28	2.28
Addition and Subtraction	7	1.18	1.07	0.86	1.44	1.69	1.46	0.71	1.72	1.85	1.70	0.70	1.94	1.89	1.58	1.44	1.94
Matching Subtest	11	7.81	2.77	1.35	2.76	8.41	2.28	1.49	2.40	8.98	2.05	1.05	1.94	9.46	1.31	0.77	1.33
Relational Terms Total	17	8.99	2.79	1.02	3.11	9.78	2.70	1.65	3.33	9.99	2.62	1.95	3.11	9.70	3.22	2.80	3.50
Amount Relationships	9	4.26	1.62	0.59	2.06	4.48	1.68	1.03	2.25	4.65	1.82	1.09	2.26	4.39	2.01	1.52	2.47
Size Relationships	2	1.67	0.60	0.10	0.69	1.74	0.46	0.13	0.56	1.70	0.52	0.24	0.55	1.68	0.47	0.18	0.55
Position Relationships	5	2.68	1.39	0.24	1.61	3.06	1.30	0.45	1.59	3.08	1.32	0.62	1.46	3.13	1.40	0.90	1.54
Sorting Total	6	2.05	1.28	0.62	1.91	2.48	1.40	0.95	1.84	2.47	1.46	1.36	1.81	2.52	1.28	1.87	1.59
Classification Total	24	10.52	3.84	1.17	4.60	12.01	3.98	2.91	4.66	11.83	4.33	4.86	5.02	12.33	4.38	5.77	5.07
Classification by Size	2	1.06	0.77	-0.13	1.13	1.16	0.77	0.24	0.92	1.12	0.75	0.31	0.95	1.23	0.70	0.38	0.84
Classification by Form	6	1.98	1.20	0.43	1.58	2.37	1.28	0.94	1.66	2.39	1.38	1.42	1.77	2.55	1.48	1.65	1.66
Classification by Number	6	1.84	1.10	0.35	1.62	2.24	1.22	0.46	1.84	2.12	1.34	1.26	1.95	2.36	1.41	1.32	1.88
Classification by Function	9	5.18	1.90	0.55	2.34	5.72	1.81	1.29	2.04	5.75	1.81	1.75	2.16	5.73	1.99	2.18	2.20
Puzzles Total	5	1.86	1.44	0.32	1.84	2.10	1.37	0.78	1.69	2.17	1.24	0.79	1.58	2.19	1.33	1.01	1.58
Peabody Raw Score (Pretest only)	80	32.40	10.45			35.37	9.99			32.26	10.92			36.25	11.51		
Peabody Mental Age (Months)	--	40.65	11.30			43.48	11.50			40.88	12.11			45.15	13.95		
Hidden Triangles Total (Posttest)	10	4.26	1.27			4.66	1.57			4.84	1.42			4.68	1.32		
Which Comes First Total (Posttest)	12	4.45	1.98			4.92	2.42			5.87	2.74			6.80	2.54		

TABLE 12c

Pretest and Gain Scores for All Disadvantaged 5-Year-Old Children
(by quartiles)
N = 159

Test & Subtest	Maximum Possible Score	Q_1 N=37				Q_2 N=40				Q_3 N=38				Q_4 N=44			
		Pretest		Gain		Pretest		Gain		Pretest		Gain		Pretest		Gain	
		Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Grand Total	203	88.68	29.20	23.08	19.14	101.23	30.69	26.75	17.30	104.13	30.82	38.97	25.73	120.91	29.78	37.32	26.37
Body Parts Total	32	20.38	7.15	3.92	6.68	23.35	4.34	2.93	4.98	23.18	6.02	4.08	5.34	25.73	4.40	3.41	3.55
Pointing to Body Parts	5	3.27	1.41	0.76	1.48	4.25	0.95	0.20	0.72	4.00	1.01	0.32	1.07	4.20	0.99	0.55	0.98
Naming Body Parts	15	9.24	3.09	1.19	3.07	10.45	1.84	0.95	2.10	10.16	2.70	1.76	2.27	11.69	1.90	1.27	1.96
Function of Body Parts (Point)	8	5.57	2.38	1.14	2.25	5.85	2.14	1.05	2.58	6.05	2.31	1.26	2.55	6.53	1.90	1.14	1.81
Function of Body Parts (Verbal)	4	2.30	1.61	0.84	1.69	2.83	1.30	0.73	1.28	2.97	1.26	0.74	1.18	3.31	1.16	0.45	0.95
Letters Total	58	14.97	5.59	6.35	8.45	18.40	10.05	8.70	9.70	18.79	8.98	13.66	11.64	24.16	12.71	14.32	11.71
Recognizing Letters	8	2.46	1.63	0.95	2.34	3.20	2.05	1.28	2.61	3.32	2.04	2.24	2.76	4.36	2.50	1.93	2.94
Naming Capital Letters	16	1.65	2.37	2.57	3.86	2.68	4.72	4.03	4.99	2.58	4.18	6.34	5.19	5.04	5.66	6.55	5.32
Naming Lower Case Letters	8	0.54	0.84	1.05	2.21	1.10	2.05	1.28	2.53	0.84	1.72	2.61	2.64	1.89	2.52	2.82	2.93
Matching Letters in Words	4	3.05	1.20	0.73	1.15	3.28	1.20	0.50	1.20	3.64	0.57	0.21	0.58	3.58	0.75	0.32	0.77
Recognizing Letters in Words	4	1.59	1.01	0.16	1.48	1.43	1.17	0.80	1.36	1.42	1.13	1.03	1.68	1.82	1.39	1.07	1.70
Initial Sounds	4	0.78	0.67	0.24	1.09	1.08	0.89	-0.03	1.21	1.08	0.78	0.21	1.04	1.09	0.93	0.45	1.37
Reading Words	6	0.00	0.00	0.00	0.00	0.08	0.47	0.28	0.55	0.05	0.32	0.55	0.98	0.31	0.82	0.61	0.87
Forms Total	20	9.35	3.74	2.81	3.06	11.08	4.15	3.30	3.04	11.97	3.15	3.39	3.58	12.20	3.15	4.64	3.25
Recognizing Forms	4	2.08	1.14	0.27	1.56	2.38	1.25	0.20	1.42	2.42	1.15	0.68	1.69	2.11	1.09	1.18	1.44
Naming Forms	4	1.00	1.18	0.68	1.08	1.50	1.30	1.13	1.02	1.55	1.22	1.18	1.56	1.84	1.15	1.30	1.17
Numbers Total	54	21.00	10.71	5.95	6.87	23.53	11.37	7.58	6.54	25.89	11.87	11.18	9.41	31.89	10.12	9.66	9.93
Recognizing Numbers	6	2.11	1.54	0.70	1.68	2.10	1.69	1.08	1.70	2.45	1.83	1.95	2.22	3.42	2.02	1.45	2.26
Naming Numbers	15	1.92	3.59	2.19	3.00	2.35	3.62	2.73	2.94	3.26	4.41	4.66	4.19	5.31	4.82	4.89	4.71
Numerosity	6	3.65	1.64	0.92	1.38	4.23	1.91	0.75	1.72	4.11	1.56	0.84	1.39	4.93	1.29	0.68	1.20
Counting	9	5.65	2.66	0.54	2.18	5.93	2.47	1.45	2.16	6.66	1.91	1.11	1.67	7.20	1.83	0.73	2.31
Addition and Subtraction	7	1.84	1.72	0.51	1.82	2.45	2.04	0.68	1.31	2.63	1.98	1.11	1.83	3.29	1.80	0.39	1.71
Matching Subtest	11	8.84	2.61	1.05	2.84	9.48	1.72	0.70	1.64	9.97	1.05	0.32	1.49	9.96	1.19	0.66	1.27
Relational Terms Total	17	10.81	3.28	0.97	2.85	11.28	3.44	1.18	3.56	11.11	2.66	1.58	2.34	12.02	2.62	1.25	3.05
Amount Relationships	9	5.32	1.76	0.41	1.71	5.35	2.17	0.53	2.36	5.24	1.87	0.76	2.01	5.87	1.70	0.61	1.90
Size Relationships	2	1.76	0.44	0.03	0.50	1.78	0.48	0.13	0.56	1.82	0.46	0.08	0.43	1.87	0.34	0.14	0.35
Position Relationships	5	3.35	1.55	0.35	1.67	3.48	1.30	0.45	1.68	3.53	1.06	0.50	1.08	3.82	1.01	0.25	1.28
Sorting Total	6	2.89	1.33	0.62	1.74	2.83	1.50	0.95	1.85	2.74	1.67	1.71	1.63	3.27	1.57	1.36	1.87
Classification Total	24	12.05	5.07	3.19	4.08	14.28	4.74	2.45	5.08	14.05	4.98	4.13	4.64	15.49	4.24	4.18	4.66
Classification by Size	2	1.24	0.76	0.19	0.88	1.35	0.74	0.18	0.90	1.37	0.79	0.24	0.85	1.36	0.71	0.48	0.88
Classification by Form	6	2.22	1.49	0.78	1.34	3.05	1.69	0.88	1.91	3.18	1.37	0.89	1.72	3.31	1.24	1.30	1.61
Classification by Number	6	2.49	1.71	0.70	1.54	2.88	1.47	0.25	1.89	2.89	1.64	0.84	1.52	3.47	1.52	0.70	1.76
Classification by Function	9	5.73	1.91	1.27	2.01	6.50	1.77	1.00	2.18	6.03	2.02	1.95	1.92	6.87	1.47	1.36	1.73
Puzzles Total	5	2.05	1.39	1.00	1.83	2.33	1.46	1.08	1.65	2.45	1.37	0.92	1.62	3.02	1.45	0.73	1.60
Peabody Raw Score (Pretest only)	80	37.81	9.87			39.10	11.54			43.68	10.44			45.82	9.29		
Peabody Mental Age (Months)	--	46.08	12.29			48.63	16.15			53.87	15.00			56.62	13.51		
Hidden Triangles Total (Posttest)	10	4.65	1.55			4.61	1.60			5.05	1.45			5.09	1.58		
Which Comes First Total (Posttest)	12	5.16	2.93			6.17	2.88			6.63	2.89			7.62	3.20		

FIGURE 3a
Pretest and Gain on Total Test Score for All Disadvantaged 3, 4, and 5-Year-Old Children

(by viewing quartiles)

N=127 3-Year-Olds
N=433 4-Year-Olds
N=159 5-Year-Olds

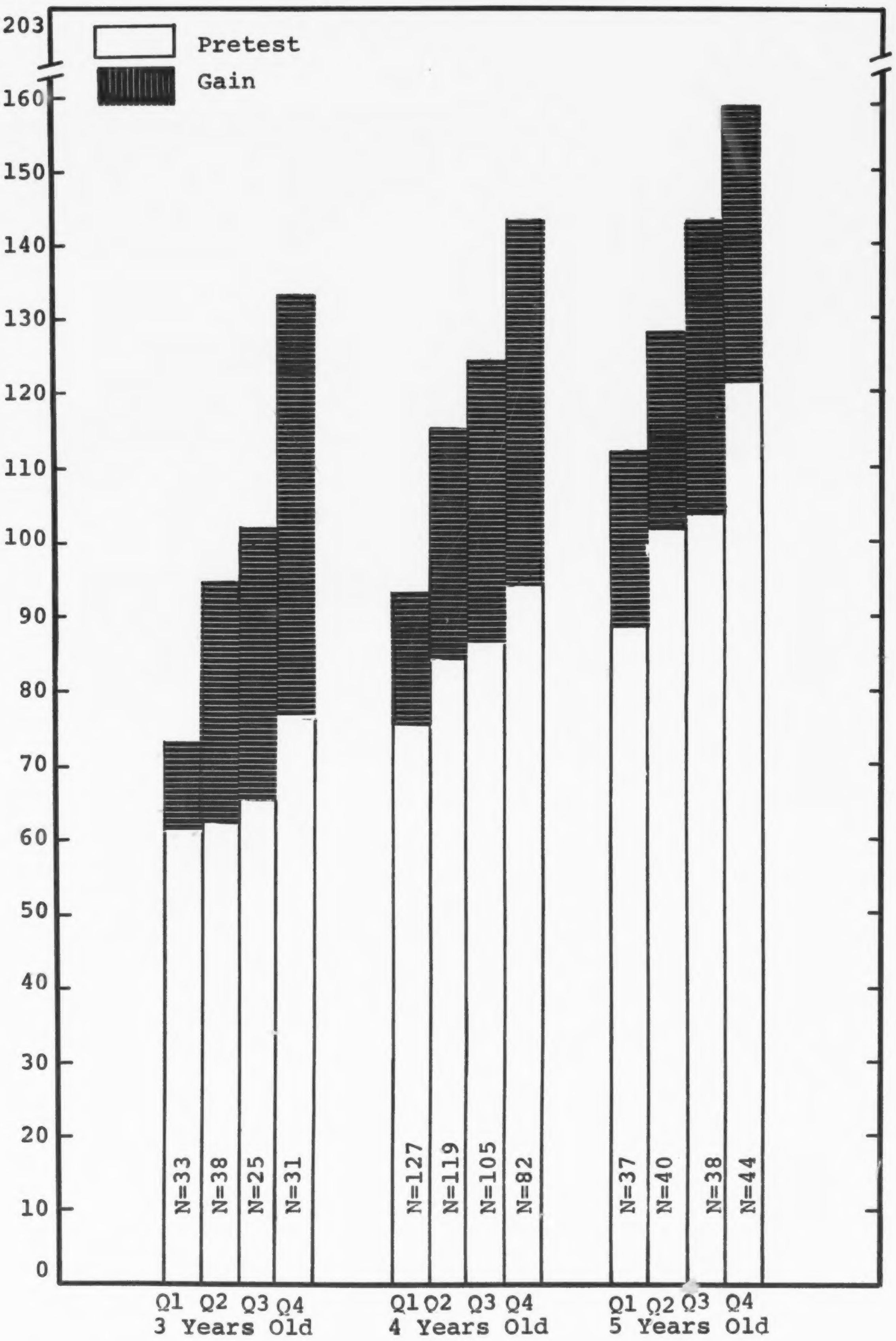


FIGURE 3b

Selected Pretest and Gain Scores for All Disadvantaged 3-Year-Old Children

(by viewing quartiles) Q1=33 Q2=38 Q3=25 Q4=31

Dashed lines beneath test titles indicate maximum possible scores.

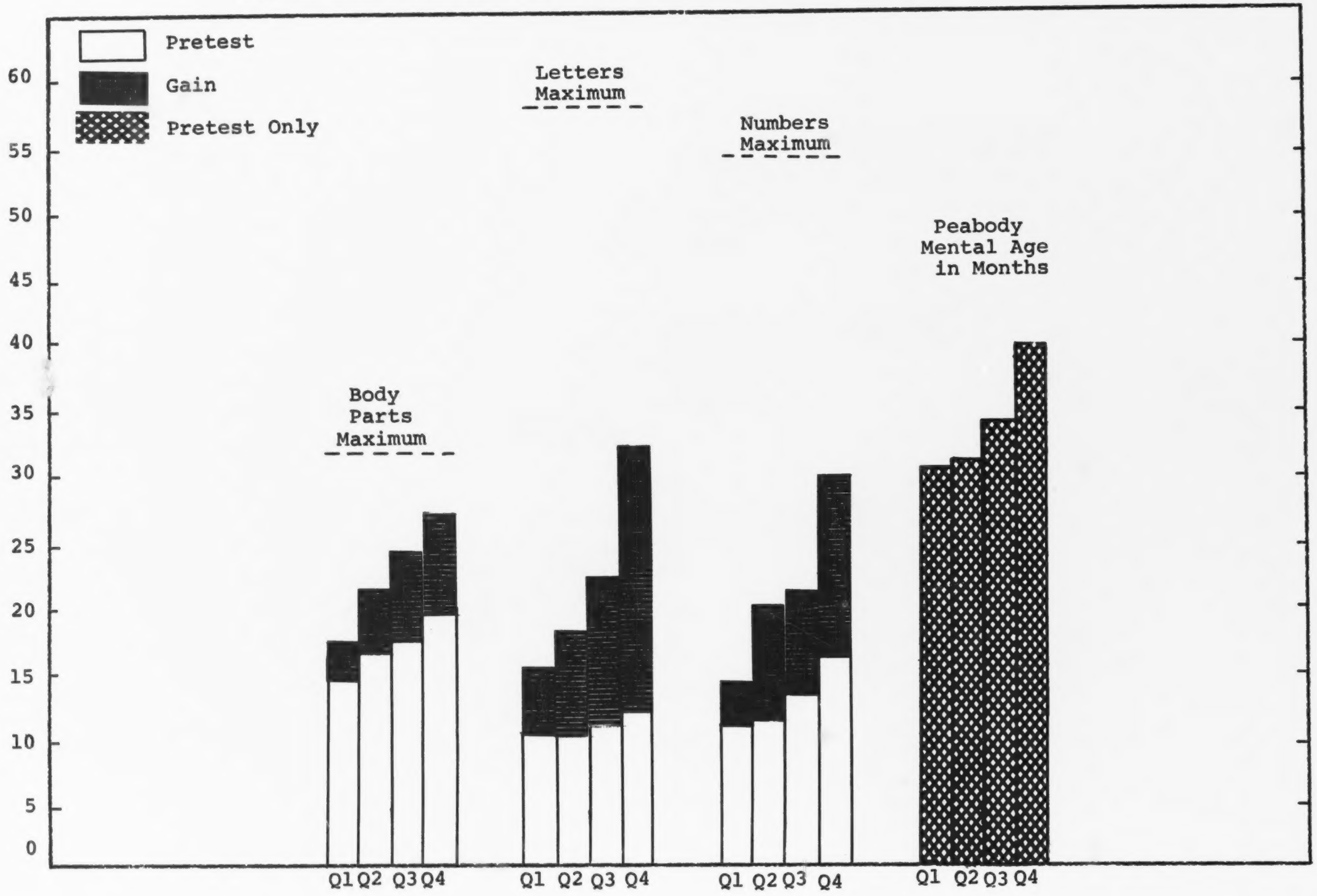


FIGURE 3c

Selected Pretest and Gain Scores for All Disadvantaged 3-Year-Old Children

(by viewing quartiles) Q1=33 Q2=38 Q3=25 Q4=31

Dashed lines beneath test titles indicate maximum possible scores.

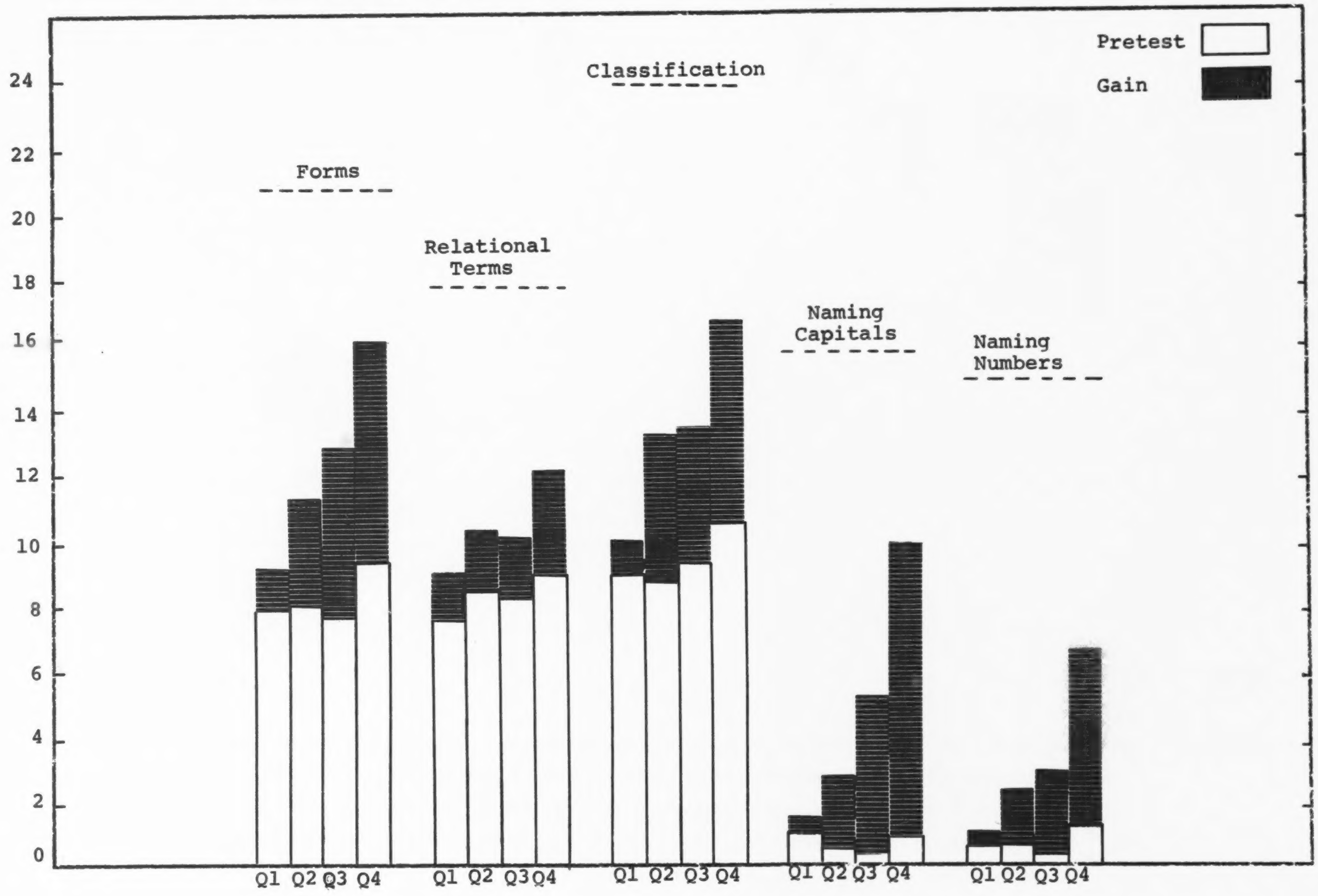


FIGURE 3d

Selected Pretest and Gain Scores for All Disadvantaged 3-Year-Old Children

(by viewing quartiles) Q1=33 Q2=38 Q3=25 Q4=31

Dashed lines beneath test titles indicate maximum possible scores.

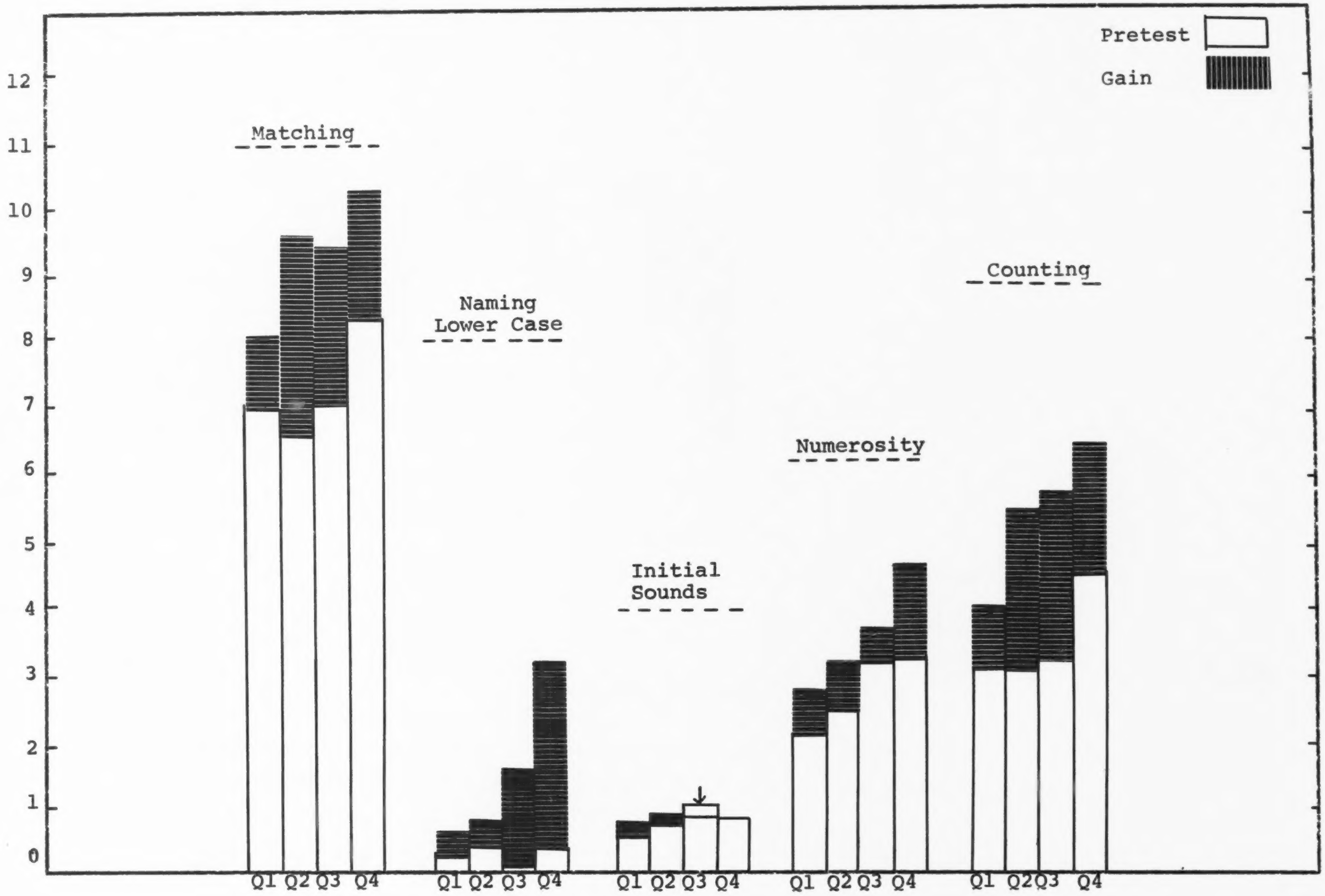


FIGURE 3e

Selected Pretest and Gain Scores for All Disadvantaged 3-Year-Old Children

(by viewing quartiles) Q1=33 Q2=38 Q3=25 Q4=31

Dashed lines beneath test titles indicate maximum possible scores.

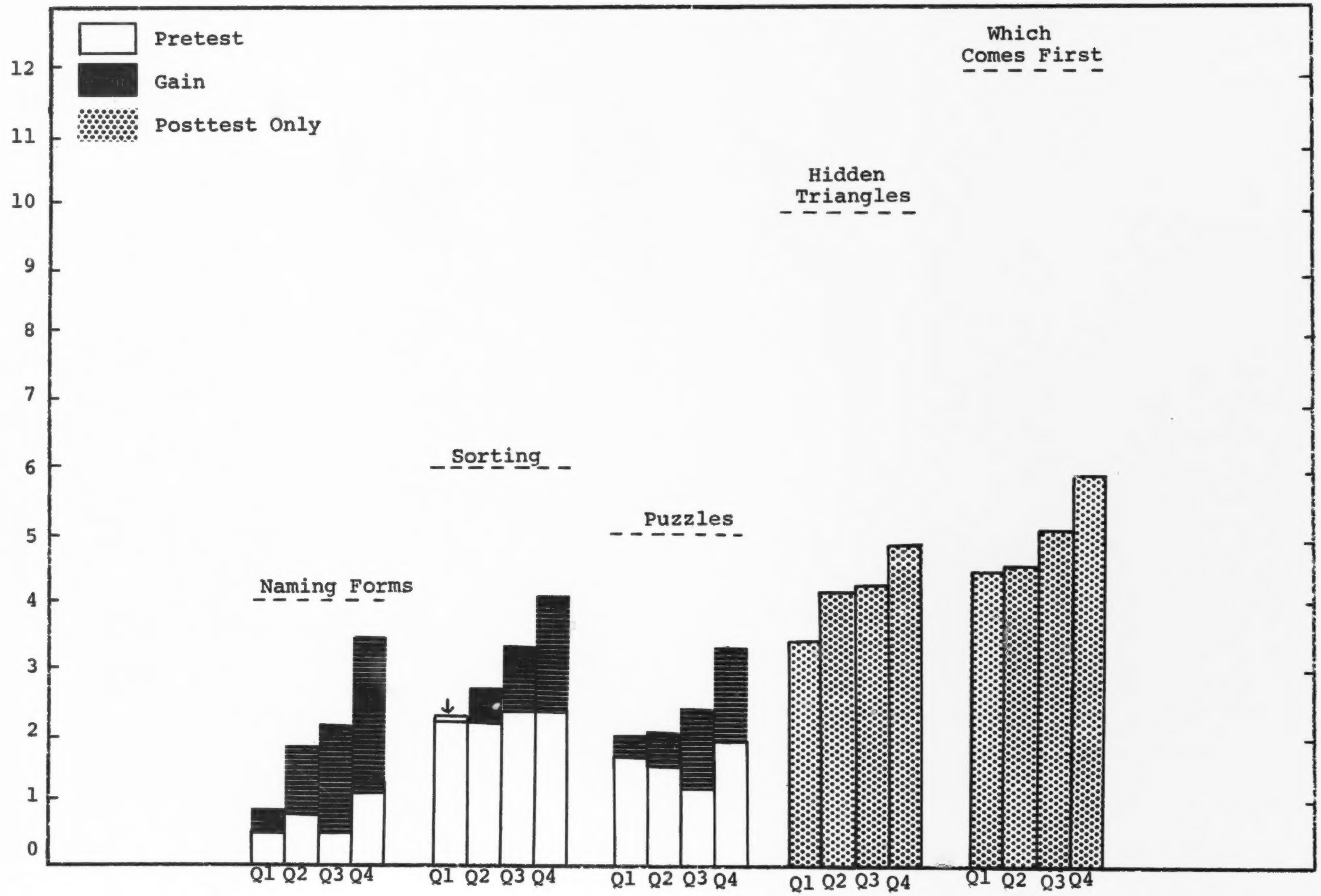


FIGURE 3f

Selected Pretest and Gain Scores for All Disadvantaged 4-Year-Old Children

(by viewing quartiles) Q1=127 Q2=119 Q3=105 Q4=82

Dashed lines beneath test titles indicate maximum possible scores.

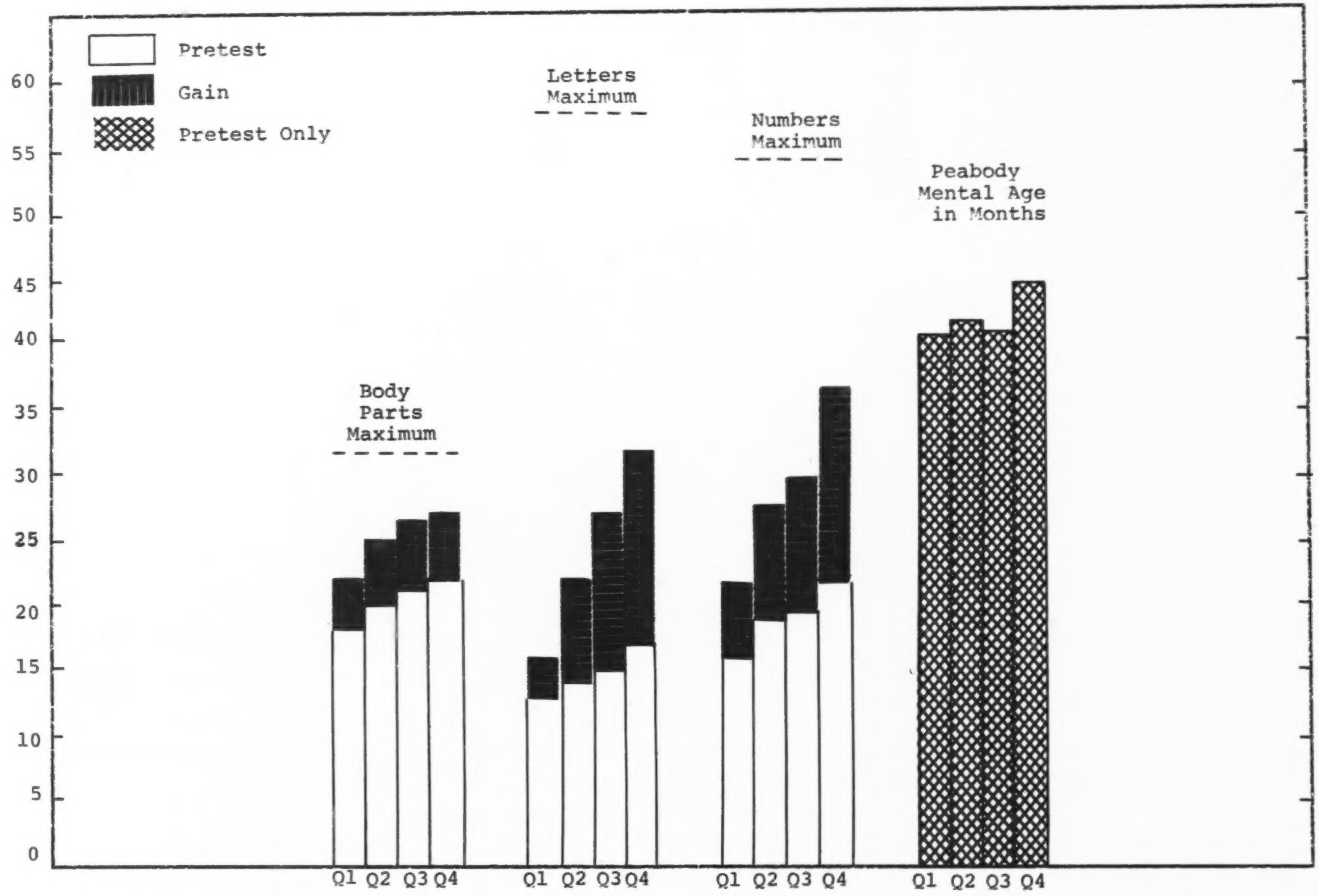


FIGURE 3g

Selected Pretest and Gain Scores for All Disadvantaged 4-Year-Old Children

(by viewing quartiles) Q1=127 Q2=119 Q3=105 Q4=82

Dashed lines beneath test titles indicate maximum possible scores.

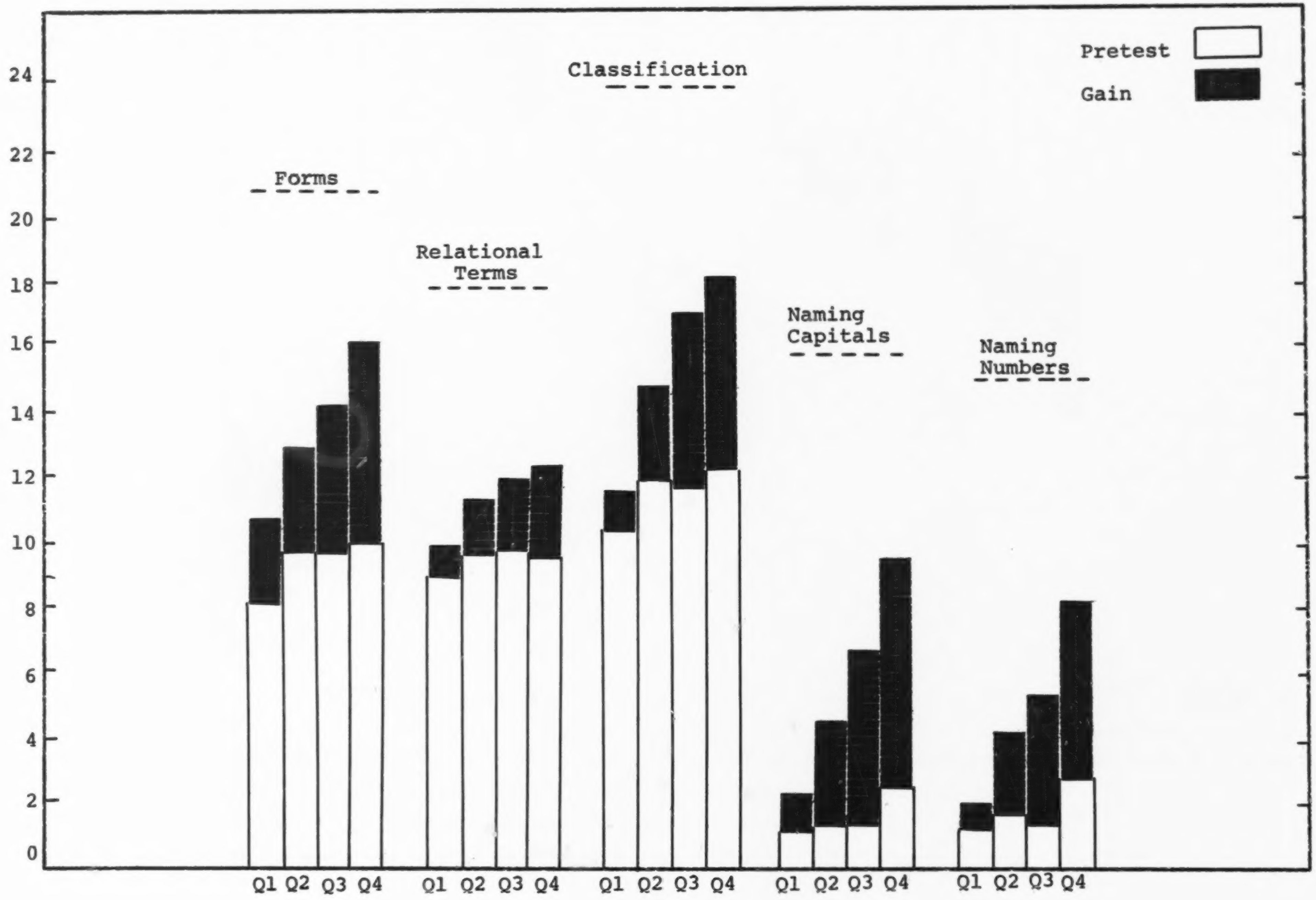


FIGURE 3h

Selected Pretest and Gain Scores for All Disadvantaged 4-Year-Old Children

(by viewing quartiles) Q1=127 Q2=119 Q3=105 Q4=82

Dashed lines beneath test titles indicate maximum possible scores.

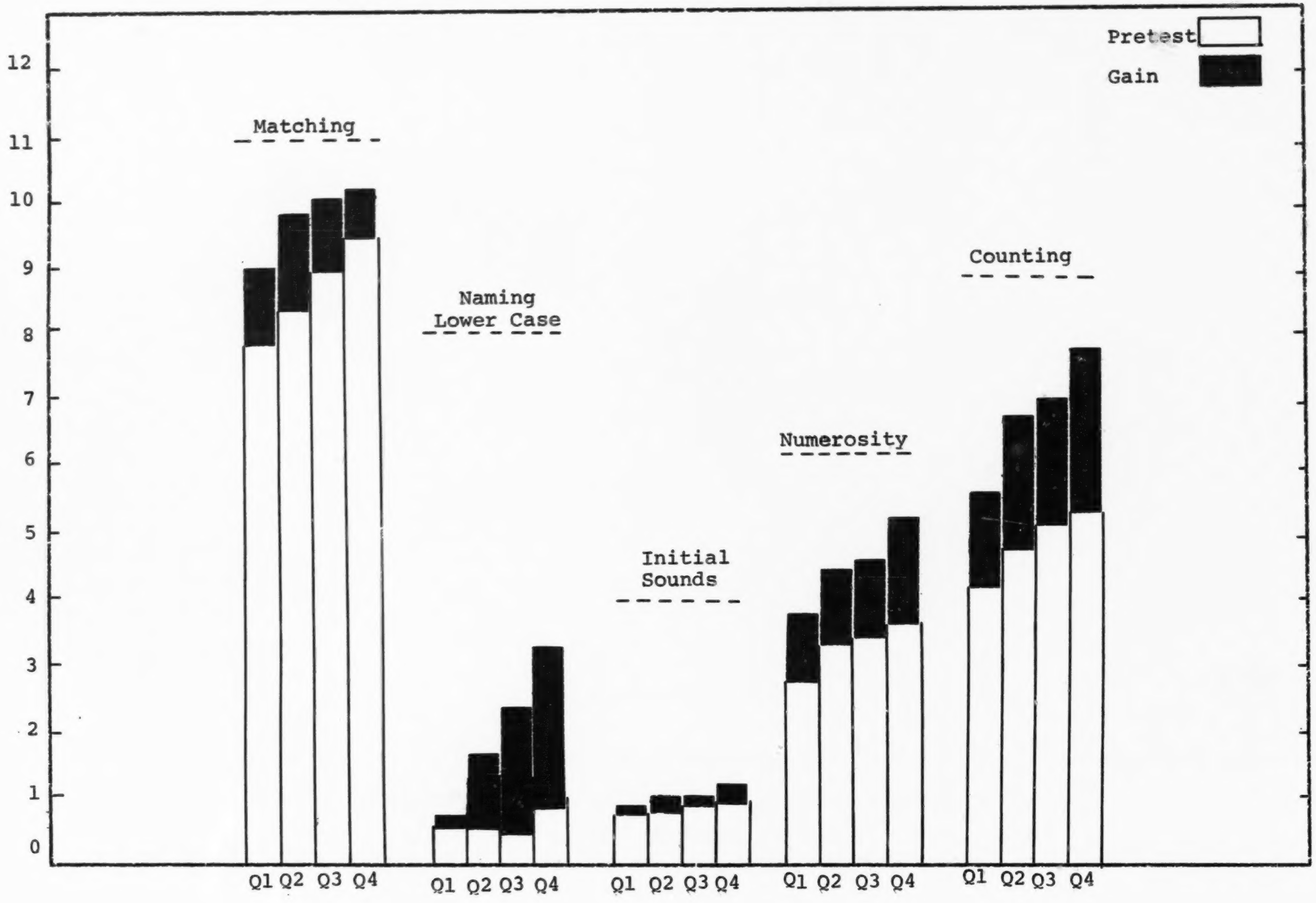


FIGURE 3i

Selected Pretest and Gain Scores for All Disadvantaged 4-Year-Old Children
(by viewing quartiles) Q1=127 Q2=119 Q3=105 Q4=82

Dashed lines beneath test titles indicate maximum possible scores.

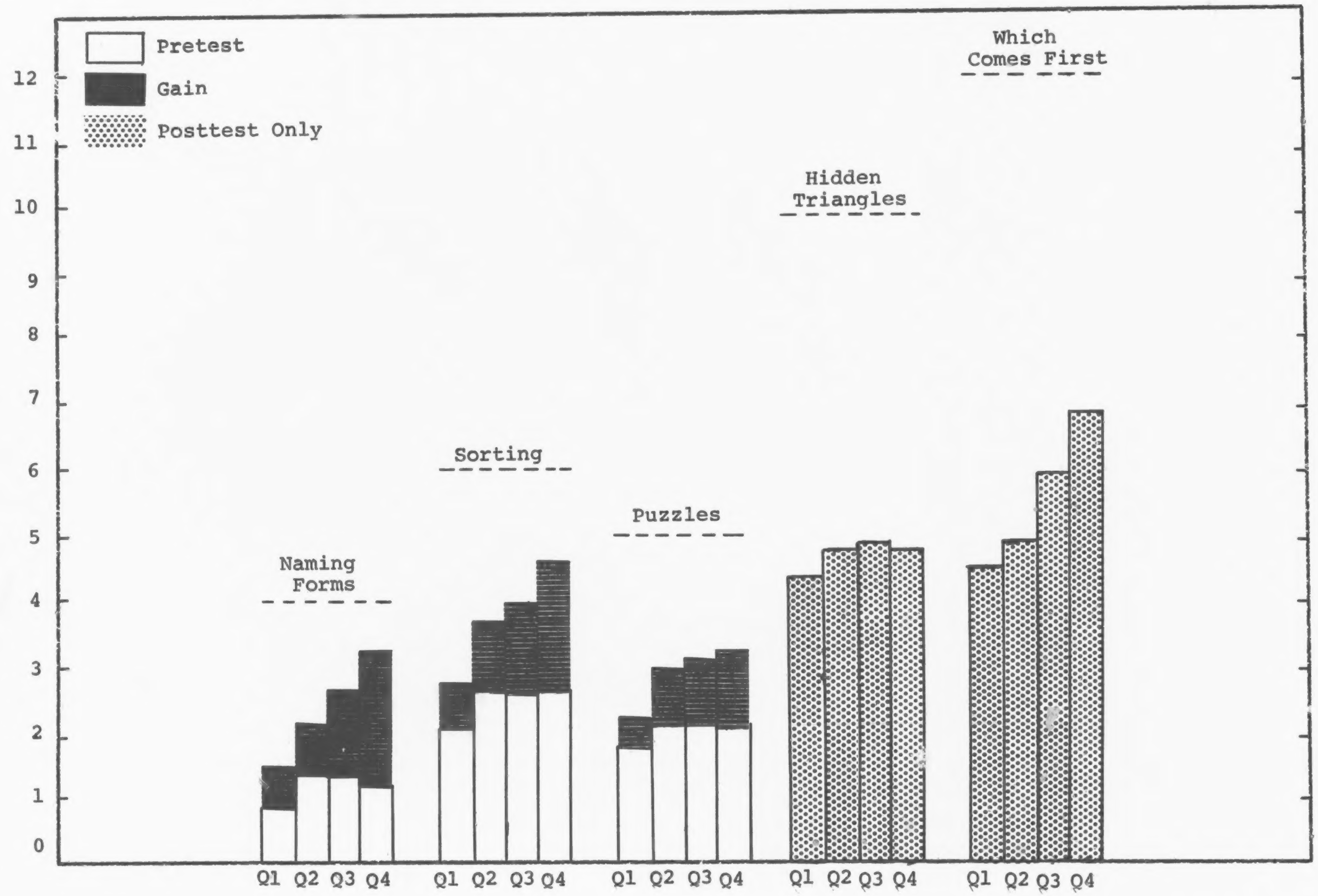


FIGURE 3j

Selected Pretest and Gain Scores for All Disadvantaged 5-Year-Old Children

(by viewing quartiles) Q1=37 Q2=40 Q3=38 Q4=44

Dashed lines beneath test titles indicate maximum possible scores.

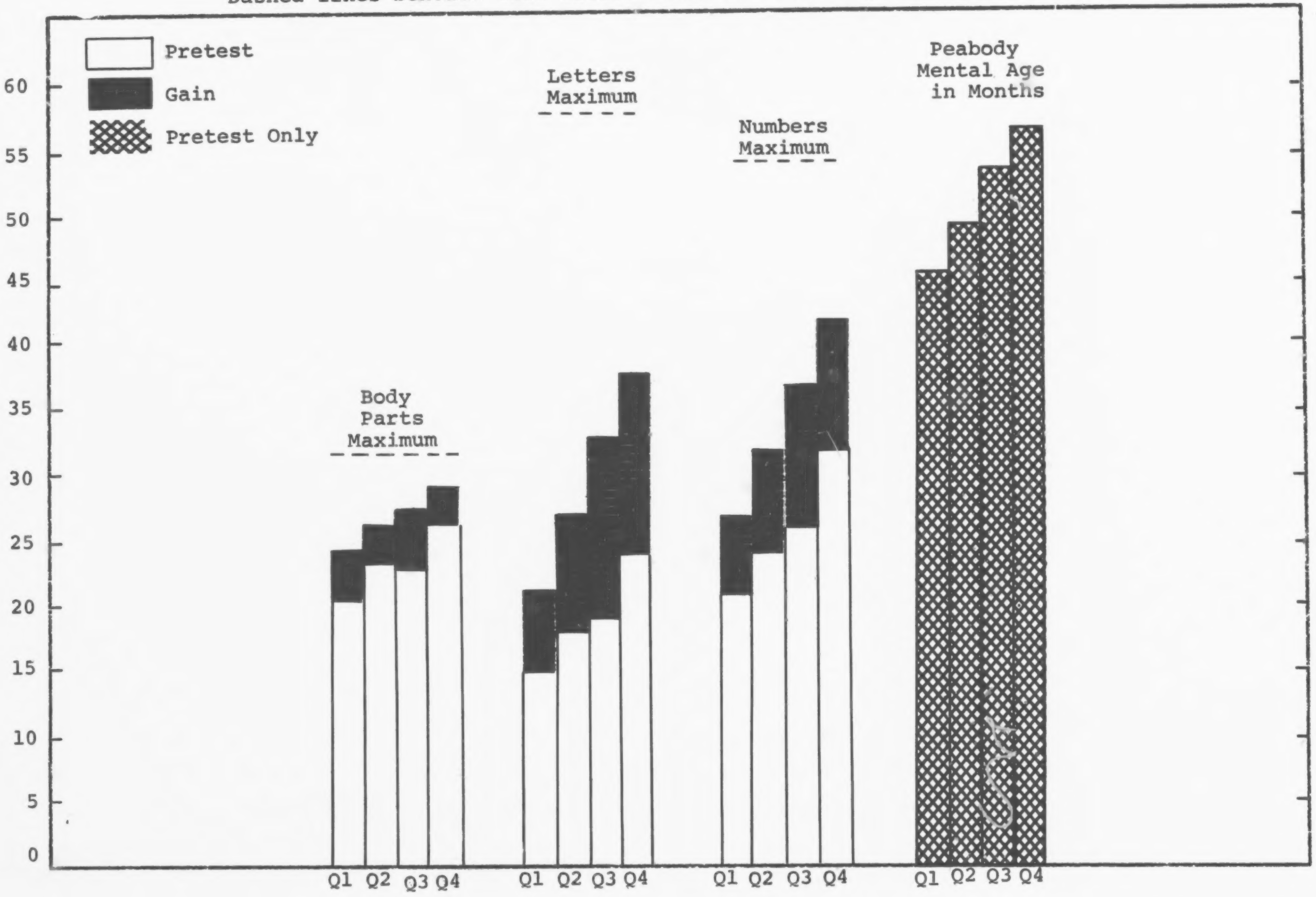


FIGURE 3k

Selected Pretest and Gain Scores for All Disadvantaged 5-Year-Old Children
(by viewing quartiles) Q1=37 Q2=40 Q3=38 Q4=44
Dashed lines beneath test titles indicate maximum possible scores.

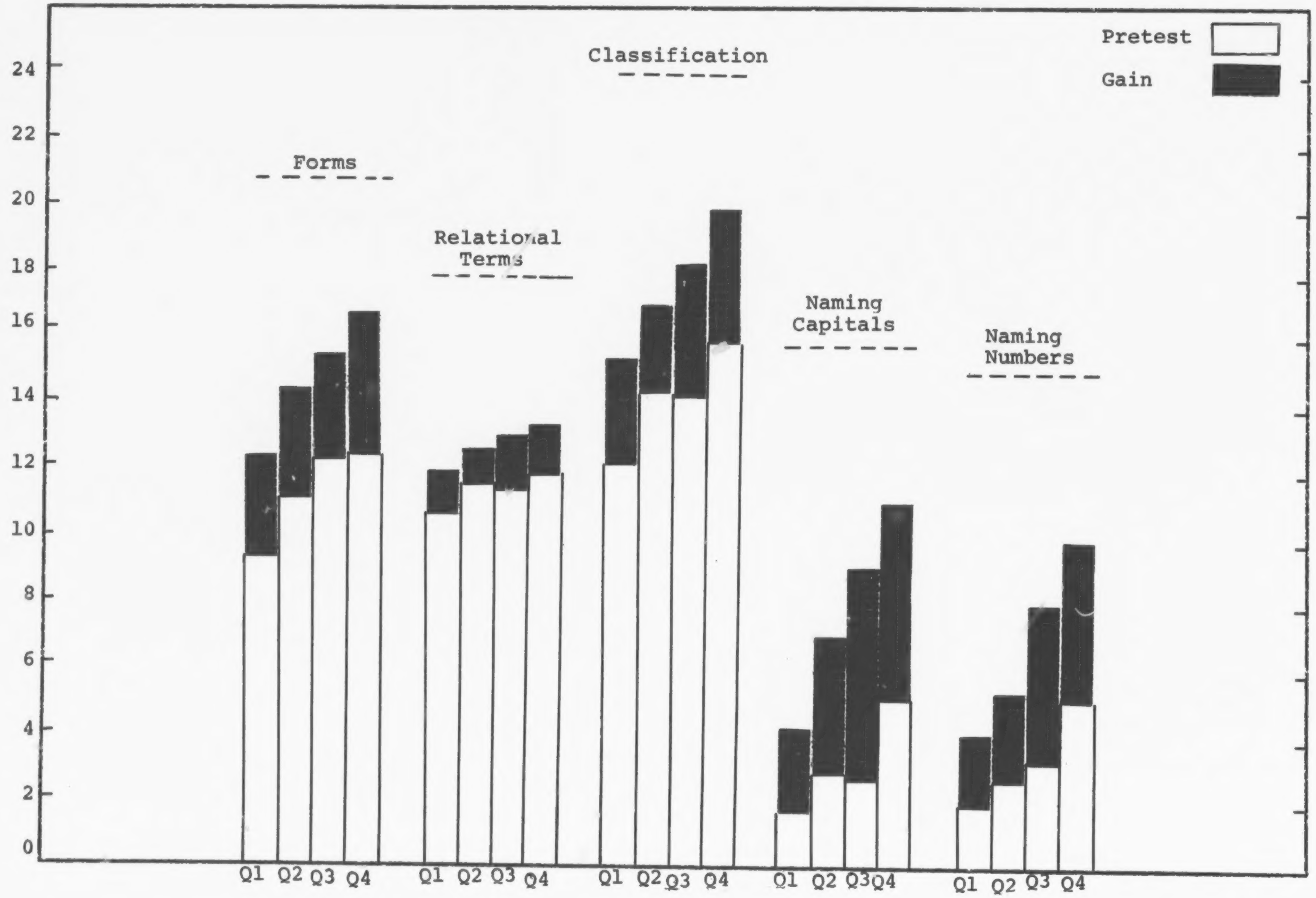


FIGURE 31

Selected Pretest and Gain Scores for All Disadvantaged 5-Year-Old Children

(by viewing quartiles) Q1=37 Q2=40 Q3=38 Q4=44

Dashed lines beneath test titles indicate maximum possible scores.

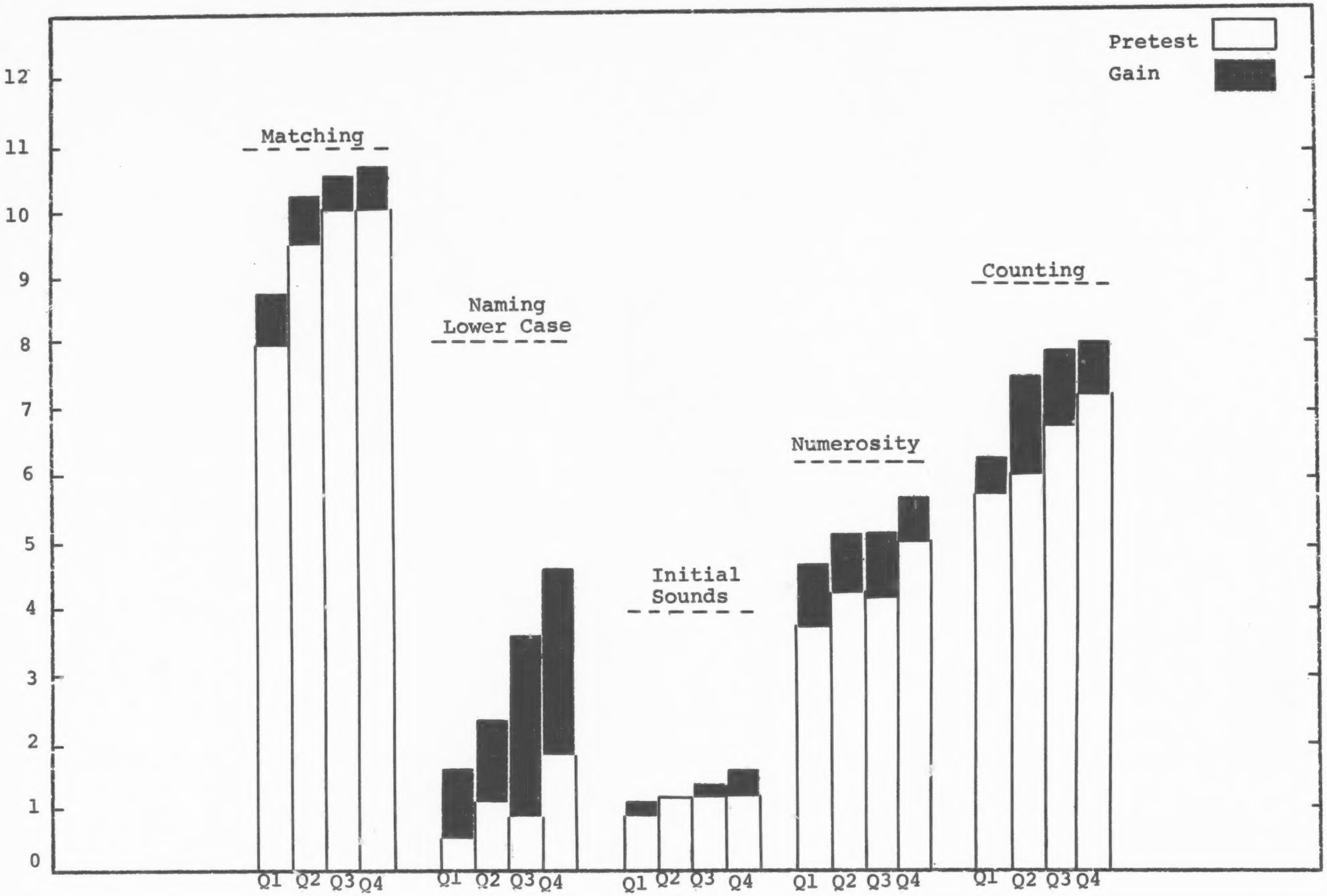
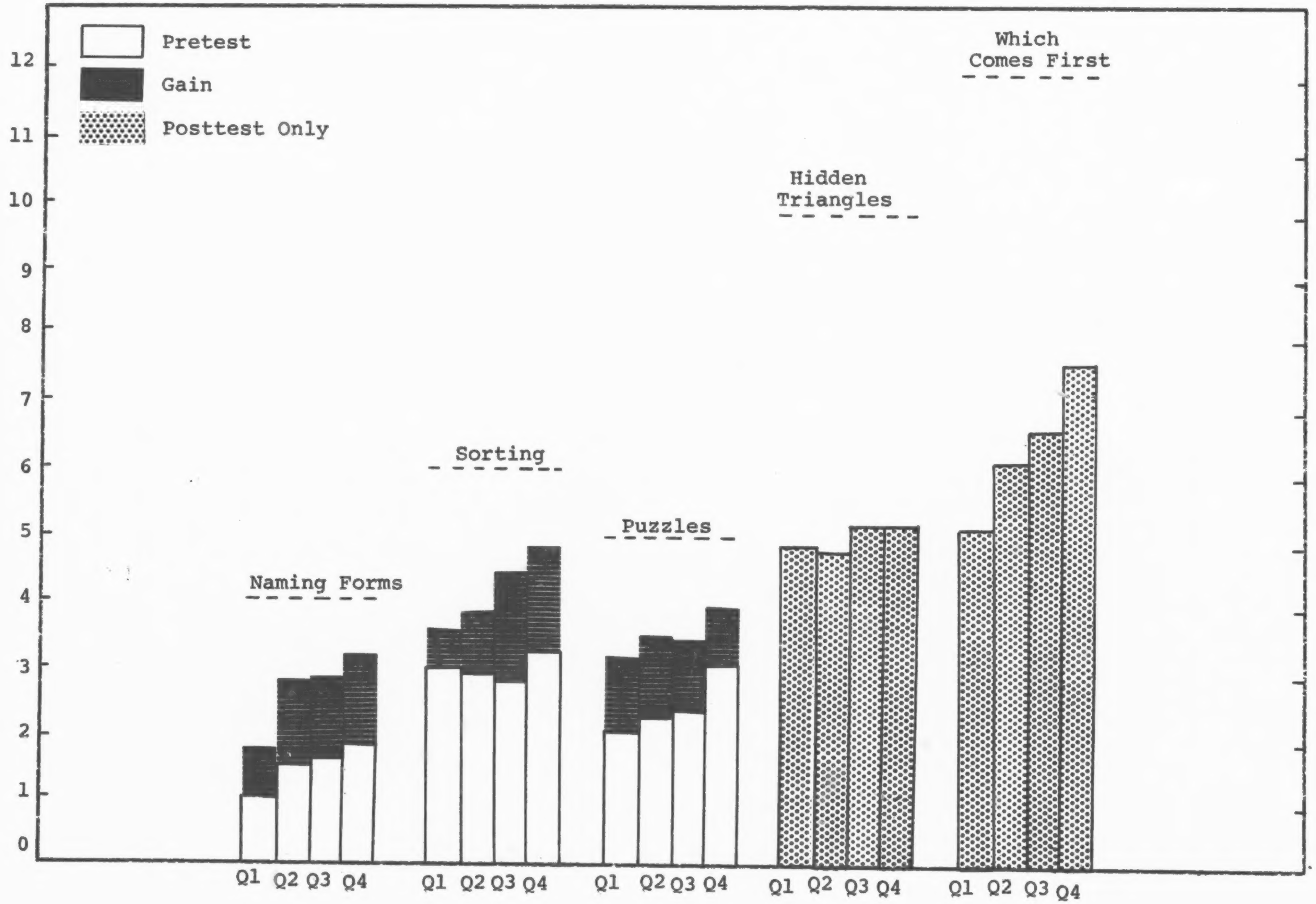


FIGURE 3m

Selected Pretest and Gain Scores for All Disadvantaged 5-Year-Old Children

(by viewing quartiles) Q1=37 Q2=40 Q3=38 Q4=44

Dashed lines beneath test titles indicate maximum possible scores.



of learning most of the content of Sesame Street, and younger children who viewed the show frequently (Q4) gained considerably more than the older ones. In terms of average gains for Q4 children on Grand Total, the

3-year-olds gained 57.2,
4-year-olds gained 49.0, and
5-year-olds gained 37.3.

Note, however, that this effect was not present for low viewing (Q1) children. Here the positions were reversed. Again, in terms of average gains on Grand Total, the

3-year-olds gained 12.4,
4-year-olds gained 18.2, and
5-year-olds gained 23.1.

This is a singular finding. It leaves the strong impression that many of the Sesame Street learning tasks -- for example, matching, labeling, and recognizing symbolic materials such as letters, numbers, and forms -- are quite within the learning level of 3-year-olds. While children two years older will start to learn these materials anyway from home or school, there seems to be no problem teaching them to 3-year-olds. Thus, the subjective reports of mothers about the unexpected learnings of even younger children who watched Sesame Street seem entirely credible. Future research on the effects of Sesame Street on 2-year-olds would seem to be worth encouraging.

-- As before, it will be noted that the children who watched more tended to have somewhat higher pretest scores. This confounding, partly offset by using gain scores as a vehicle for comparison, was by no means invariable. When comparisons are made across age groups the confounding falls away and the effects of viewing become dramatic. Thus, the highest viewing (Q4) 3-year-old group started lower than any 5-year-old quartile group and lower than all 4-year-old quartile groups except Q1 of the 4-year-olds (where the mean pretest scores were virtually the same). Yet at posttest, 3-year-olds in Q4 now scored higher on the average than those in Q1, Q2, and Q3 among the 4-year-olds and Q1 and Q2 among the 5-year-olds. Figure 3a presents these results graphically.

-- It seems reasonably clear that 3-year-old disadvantaged children did not have to watch Sesame Street daily in order to be affected by the show. Q2 children aged 3 gained 30.7 points whereas Q1 children aged 3 gained only 12.4 points. This was despite the fact that both groups were quite comparable at pretest. A similar and telling comparison between Q2 and Q3 of the 5-year-old group indicates that relatively small amounts of viewing are effective, too, among 5-year-olds.

-- Some test and subtest gains seem to be closely related to the age of the viewer. That is, some goals areas seem too difficult for younger children and others seem too easy for older children. An examination of the data for purposes of "age placement" of content should prove to be valuable. For example, heavy viewing (Q4) 4-year-olds and moderately heavy to heavy viewing (Q3 and Q4) 5-year-olds seemed to benefit in reading words -- a transfer task. No 3-year-old group seemed to be affected with respect to this subtest. The same phenomenon is apparent with the Initial Sounds subtest which, unlike reading words, was a stated goal of the show. It was rarely taught directly on Sesame Street though it was indirectly taught a great deal. (See section A 10, Content Analysis, below.) In any case, it was the 5-year-old viewers rather than the 3- or 4-year-olds who seemed to grasp initial sounds.

On the other hand, Body Parts seemed most successful with 3-year-olds. They had most to gain. The older children gained less and this was because older children already knew the names of the body parts taught on Sesame Street.

-- In the Letters Test at all age levels the large gains evidenced came mainly from the three subtests involving naming and recognition of letters. These goal areas were directly and attractively taught. (See below, both Content Analysis and Observations.) Apparently they were also successfully taught.

-- The Forms Test seemed to be affected at all age levels by amount of viewing. The exception was with 5-year-olds in Q4 who had begun to reach the ceiling of the test and had, in the main, mastered this goal area before viewing Sesame Street.

-- The Numbers gains were largest with 3- and 4-year-old viewers. The counting area was heavily featured on Sesame Street so it is not surprising to note that the effects of viewing were quite marked in this area even in the low viewing groups (Q2 vs. Q1).

-- In the Sorting, Classification, and Puzzles Tests, 3- and 4-year-olds seemed to benefit from viewing. Sorting showed gains for the 5-year-old children was well.

-- From the pretest scores on the Peabody Picture Vocabulary Test, it seems reasonably clear that this sample of disadvantaged children was indeed disadvantaged. The 3-year-olds had an average mental age of less than 3 years at pretest. Similarly 4-year-olds and 5-year-olds had mental ages considerably below their chronological ages. More importantly, although in general the greater the amount of viewing the higher the mental age, this correlation was not always operative. For example, Q1 had about the same average mental age as Q2 in the 3-year-olds, while Q2 had a higher average mental age than Q3 in the 4-year-olds. Nonetheless, the overall gains on the criterion measure for 3-year-olds in Q2 were considerably higher than for 3-year-olds in Q1 and similarly Q3 4-year-olds outgained Q2 4-year-olds.

-- In general, age did seem to be a factor influencing gains, but the age groups that obtained the advantage varied according to the difficulty level of the content being taught.

In general, many of the major goals of Sesame Street seemed to be well within the capacity of 3-year-old disadvantaged children. Their pretest scores were considerably lower than those of the disadvantaged 4- and 5-year olds, but their gains on most subscores were more dramatic.

At this point, data from the parent questionnaires will be introduced. It will be recalled that the questionnaires at pretest and posttest had many questions in common to enable changes to be monitored, had groupings of questions to enable scales to be formed, and had individual questions that also seemed to have relevance to the evaluation. It therefore seems appropriate to study the parent questionnaires, to see what light they shed on the results observed by age.

Tables 13a-c present the data, grouped by age, obtained from scales developed from the pretest and posttest Parent Questionnaires (See Appendices C and D). The scales were:

Parent Expectation Indices, each obtained by combining responses to items 11 and 24 on the pretest, and items 18 and 9 on the posttest, respectively. Rational weightings were used to discriminate response levels. These indices attempt to measure parental level of aspiration for the child.

Child Affluence Indices, obtained by adding the Yes responses to pretest item 29 and, on the posttest, to item 16. They attempt to measure the children's personal possessions.

Educational Uses Indices, obtained by adding the weighted responses to pretest item 30 and, on the posttest, to item 17. They attempt to measure the extent to which the children were exposed to educational facilities available outside the home.

Parent Affluence Index, obtained by adding the Yes responses to pretest item 36. It attempts to measure the material affluence of the children's homes.

Socioeconomic Status Index (SES), obtained by averaging the number of years of formal education of the child's mother and father (pretest items 37 and 40). It attempts to measure the concept of social class in addition to the more specific goal of discovering the educational level of the parents.

Tables 14 a-c present Parent Questionnaire data, grouped by age, for those items regarded as most relevant for this discussion. Again, the great wealth of data had to be controlled lest the Midas effect overwhelm both readers and writers. Omissions of items from Table 13, while regretted in one sense, are necessary nonetheless.

Tables 13 a-c contain data of interest not only for this study but also for the field of child development generally. Probability levels, when significant, are in parentheses. Here are some highlights for these data:

-- The Parent Expection Index at pretest was significantly related to the amount of viewing the 3-, 4-, and 5-year-olds subsequently did ($p<.01$). At posttest this index was related to the amount of viewing the 3- and 4-year-olds had previously done ($p<.01$). Enigmatically the index rose most from pretest to posttest for Q1 children.

Thus, there are few grounds for arguing that Sesame Street had the side-effect of increasing the parents' expections for their children. As further illustration of this lack of effect, note how parents of Q4 3-year-olds decreased their expectation level while the parents of children in the other quartiles increased theirs. The interpretation of this finding should be dependent upon consideration of the actual questions asked in the questionnaires. (See Appendices B and C.) These questions deliberately included areas not specifically taught by Sesame Street. It was a side-effect that was under investigation and not an actual goal of the show.

-- Expectation levels seemed to decrease slightly over the age range and to remain fairly constant over the time of the study.

-- The Child Affluence Indices were significantly associated with amount of viewing for 4- and 5-year-olds ($p < .01$) at pretest and for 3- and 4-year-olds at posttest ($p < .05$). That is, children who watched more usually had more personal property. In general, children seemed to be a little more affluent at posttest than at pretest possibly reflecting an accumulation of child possessions over a six month period.

- The Educational Uses Index at pretest showed that children who would in fact watch the show most often tended to come from families with a positive educational climate. That is, the children used available educational facilities more in Q4 than in Q1. This difference seemed to have dropped away by posttest time. The mean of children in the lower quartiles increased on the index during the show, but the mean of children in the highest viewing group did not. There is no clear explanation but perhaps Q4 children had already reached some sort of asymptote at pretest and the others caught up.

- Parent affluence in this disadvantaged sample was clearly related to amount of viewing in all three age groups ($p<.01$). There was little difference in affluence from age group to age group suggesting that all children were, as intended, sampled from the same disadvantaged population.
- The SES index (mean years of parents' education) indicated that amount of viewing by the child was significantly related to amount of education of the parents for 3-year-olds ($p<.01$) and 5-year-olds ($p<.01$) but not for 4-year-olds ($p=.09$). Overall then, there is a tendency, which is consonant with previous evidence as well as evidence yet to be presented, that the better educated parents will have children who watch Sesame Street more often.
- The mean number of years of education of the parents of our disadvantaged sample was, for most quartiles at all age levels, less than 11 years. In no case was the average as "high" as a high school diploma.

Tables 14 a-c present item level data from the Parent Questionnaires for the disadvantaged sample grouped by age levels. Within each table, the data are grouped by viewing quartile. Presented here are some of the more noteworthy findings.

- For all age levels, more of the mothers usually read to their children at posttest than at pretest. Perhaps increasing age, the generalized effects of Sesame Street, or both are responsible.

- Mothers of children in the higher viewing quartiles read to their children more often and talked with them about Sesame Street more often than mothers of lower quartile children.
- Mothers of 5-year-old children in Q4 were less likely to think their children had to be forced to learn than mothers of 5-year-olds in lower quartiles.
- For children who watched Sesame Street most, ETV viewing was an already established habit at pretest.
- Possessing a color TV did not seem to be particularly associated with amount of viewing.
- Children who watched Sesame Street more frequently were not heavier viewers of television generally. Thus the disproportionately higher mean gains of the children in the higher viewing quartiles could not have been influenced by the amount of other television viewing they experienced.

In summary, the data indicate that disadvantaged children at all age levels benefited from watching Sesame Street, with 3-year-olds making the most striking gains. A number of background factors were confounded with heavy viewing and these will be examined in more detail in Sections B and C of this chapter. It does seem that gains occurred most clearly in goal areas taught directly. There was some transfer learning, especially with the older children, but sociological side-effects were not detected.

TABLE 13a

Parent Questionnaire Scales for All Disadvantaged 3 Year Old Children

(by quartiles)

	Maximum Possible Score	Total N= 102		Q1 N= 25		Q2 N= 32		Q3 N= 22		Q4 N= 23		P
		Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	
Parents'Expectation												
Pre	**50**	37.4	7.3	35.3	7.0	35.3	8.7	38.5	5.8	41.7	4.3	.003
Post	**50**	38.5	5.8	35.9	6.7	37.9	6.0	39.4	4.7	41.2	4.3	.001
Child Affluence												
Pre	**6**	3.2	1.8	2.8	2.0	2.9	1.9	3.6	1.4	3.9	1.5	.093
Post	**6**	3.7	1.5	3.2	1.5	3.4	1.7	4.0	1.2	4.4	1.0	.019
Child Educational Uses												
Pre	**21**	3.2		3.2		2.8		3.0		4.0		
Post	**21**	4.0		4.0		4.0		4.1		4.0		
Parents' Affluence	**14**	8.1	2.5	7.0	2.6	7.9	2.4	8.3	2.6	9.5	2.1	.007
Mean Years of Parents' Education	**16**	10.7	2.4	9.6	2.5	10.3	2.6	11.2	1.4	11.9	2.0	.004

TABLE 13b

Parent Questionnaire Scales for All Disadvantaged 4 Year Old Children

(by quartiles)

	Maximum Possible Score	Total N= 373		Q1 N= 104		Q2 N= 101		Q3 N=96		Q4 N= 72		P
		Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	
Parents'Expectation												
Pre	50	36.4	7.5	34.1	8.7	37.0	7.1	37.1	6.2	38.0	7.3	.002
Post	50	37.0	5.8	35.4	6.5	37.2	5.2	37.5	5.3	38.5	5.6	.003
Child Affluence												
Pre	6	3.4	1.6	2.9	1.6	3.6	1.5	3.5	1.5	3.7	1.6	.003
Post	6	3.7	1.3	3.4	1.4	3.9	1.1	3.7	1.3	3.9	1.4	.035
Child Educational Uses												
Pre	21	3.3		2.7		3.4		3.5		3.6		
Post	21	3.8		3.6		4.1		3.8		3.4		
Parents' Affluence	14	8.3	2.4	7.3	2.3	8.2	2.4	8.9	2.0	9.0	2.5	.000
Mean Years of Parents' Education	16	10.7	2.3	10.3	2.2	10.6	2.2	11.1	2.0	10.8	2.5	.088

TABLE 13c

Parent Questionnaire Scales for All Disadvantaged 5 Year Old Children

(by quartiles)

	Maximum Possible Score	Total N=115		Q1 N=30		Q2 N=23		Q3 N=28		Q4 N=34		P
		Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	
Parents'Expectation												
Pre	50	34.5	9.2	28.2	11.5	34.9	10.6	37.8	5.1	37.0	5.3	.000
Post	50	36.9	5.3	35.0	6.1	36.5	5.9	37.9	4.5	38.1	4.4	.084
Child Affluence												
Pre	6	3.2	1.6	2.4	1.9	3.4	1.5	3.8	1.2	3.4	1.3	.002
Post	6	3.7	1.2	3.6	1.5	4.0	1.0	3.6	1.1	3.8	1.0	.509
Child Educational Uses												
Pre	21	3.9		3.0		4.0		4.3		4.5		
Post	21	4.2		4.0		4.2		4.3		4.4		
Parents' Affluence	14	8.0	2.8	6.0	2.6	8.3	2.5	8.7	2.6	8.8	2.7	.000
Mean Years of Parents' Education	16	10.3	3.2	8.4	4.2	10.9	2.7	11.3	1.9	10.6	2.7	.001

TABLE 14a

Selected Parent Questionnaire Items for all Disadvantaged 3-Year-Old Children

(by quartiles)

		P		Pretest Questionnaire*				Posttest Questionnaire*			
		Pre	Post	Q1 N=29	Q2 N=37	Q3 N=22	Q4 N=24	Q1 N=29	Q2 N=33	Q3 N=25	Q4 N=29
How often child uses art things at home.	Once a day	ns	ns	38%	32%	36%	54%	34%	24%	24%	41%
	Several a week			38	38	45	25	28	39	68	52
	Once a week or less			21	16	9	17	24	30	8	3
	Never			0	5	5	4	3	3	0	0
	Don't know			3	5	5	0	0	0	0	0
What mother usually does with child.	Plays with him	ns	ns	69	43	50	71	69	73	84	93
	Reads to him	ns	.001	55	38	59	67	45	48	88	79
	Housework	ns	ns	76	59	91	67	72	76	84	86
	Watches TV	ns	ns	7	22	23	17	21	24	28	28
	Watches TV with him	ns	(.02)	76	62	68	71	83	88	100	100
	Reads by herself	ns	ns	10	14	13	13	24	30	12	45
How often child is read to.	Once a day	ns	ns	14	11	23	17	7	15	16	21
	Several a week			38	19	27	54	31	36	56	41
	Once a week or less			34	46	27	17	59	39	28	31
	Never			10	11	9	0	3	3	0	3
	Don't know			3	13	14	13	0	6	0	0
Do most children have to be forced to learn?	Almost all the time	ns	ns	0	3	5	4	3	6	0	0
	Most of the time			3	14	18	4	7	15	12	10
	Sometimes			62	70	64	79	72	67	68	72
	Never			24	11	14	13	17	12	20	17
Does your child have to be forced to learn?	Almost all the time	ns	ns	**				0	6	4	0
	Most of the time							14	6	0	3
	Sometimes							62	61	56	52
	Never							24	27	40	45

ns = not statistically significant
Probabilities in parenthesis should be interpreted with caution since they were computed on small expected cell frequencies.

* Responses do not always total 100% because of some incomplete questionnaires.

** Question not asked in this questionnaire.

TABLE 14a

Selected Parent Questionnaire Items for all Disadvantaged 3-Year-Old Children

(by quartiles)

		P		Pretest Questionnaire				Posttest Questionnaire			
		Pre	Post	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Hours child watched TV yesterday.	6 or more	ns	ns	0%	3%	9%	13%	10%	15%	12%	14%
	4 or 5			31	14	27	21	10	15	28	28
	2 or 3			38	46	50	54	38	36	52	28
	Less than 2			31	27	14	13	34	33	8	28
Does child ever watch local ETV?	Yes	.02	(.001)	21	38	45	63	69	97	96	100
Mother watches Sesame Street with child.	Almost always	ns	ns	**				10	30	48	41
	Usually							3	15	12	10
	Sometimes							52	39	40	41
	Hardly ever							10	15	0	7
	No Sesame Street							24	0	0	0
Mother and child talk about Sesame Street.	Almost always		(.02)	**				10	27	28	48
	Usually							7	24	20	21
	Sometimes							41	39	52	31
	Hardly ever							17	9	0	0
	No Sesame Street							24	0	0	0
Child plays games based on Sesame Street.	Almost always		(.01)	**				0	9	8	28
	Usually							0	6	16	14
	Sometimes							21	33	36	52
	Hardly ever							34	33	20	3
	Don't know							21	18	20	3
	No Sesame Street							24	0	0	0
How helpful is Sesame Street for your child?	Not helpful		(.01)	**				3	0	0	0
	Somewhat							21	27	0	0
	Very							41	67	100	97
	Don't know							10	6	0	3
	No Sesame Street							24	0	0	0

TABLE 14a

Selected Parent Questionnaire Items for all Disadvantaged 3-Year-Old Children

(by quartiles)

		P		Pretest Questionnaire				Posttest Questionnaire			
		Pre	Post	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Kind of TV on which child watches Sesame Street.	Black & white		ns		**			62%	94%	86%	69%
	Color							10	6	12	31
	No Sesame Street							24	0	0	0
Employment of male head of household.	35 hours a week or more	ns		55%	51%	64%	75%		**		
	10-35 hours			7	3	0	0				
	Less than 10 hours			0	0	0	0				
	Other			38	46	36	25				
Number of people living in child's home.	2	ns		7	0	0	0		**		
	3-4			27	30	36	46				
	5-6			31	40	45	38				
	7-8			21	14	9	8				
	Over 8			0	14	5	4				
Number of rooms in house.	1-2	ns		0	0	0	4		**		
	3-4			48	27	36	29				
	5-6			45	54	50	54				
	7-8			3	11	9	8				
	Over 8			0	0	0	0				

TABLE 14b

Selected Parent Questionnaire Items for All Disadvantaged 4-year-old Children

(by quartiles)

		P		Pretest Questionnaire*				Posttest Questionnaire*			
		Pre	Post	Q1 N=119	Q2 N=108	Q3 N=97	Q4 N=74	Q1 N=108	Q2 N=111	Q3 N=102	Q4 N=78
How often child uses art things at home.	Once a day	ns	ns	35%	36%	28%	35%	32%	35%	25%	32%
	Several a week			40	49	57	51	46	44	59	55
	Once a week or less			17	11	11	11	16	15	16	12
	Never			2	4	0	0	2	2	0	0
	Don't know			6	0	4	3	4	3	0	1
What mother usually does with child.	Plays with him	ns	ns	71	72	59	68	72	82	78	73
	Reads to him	ns	.05	56	50	57	53	57	69	66	77
	Housework	ns	.02	78	77	76	81	70	86	82	81
	Watches TV	ns	ns	22	14	12	15	23	16	26	26
	Watches TV with him	ns	ns	77	81	71	72	87	92	84	92
	Reads by herself	ns	ns	20	14	11	18	22	28	28	31
How often child is read to.	Once a day	ns	(.02)	18	21	22	24	17	20	13	27
	Several a week			34	30	40	35	33	32	45	37
	Once a week or less			23	33	27	27	22	41	35	28
	Never			8	8	2	3	10	1	1	1
	Don't know			17	7	9	10	7	6	6	6
Do most children have to be forced to learn?	Almost all the time	ns	(.05)	7	4	4	1	4	3	3	0
	Most of the time			15	14	14	11	10	3	7	8
	Sometimes			60	63	61	68	76	72	62	69
	Never			16	17	18	16	10	23	28	23
Does your child have to be forced to learn?	Almost all the time		ns	**				4	1	2	1
	Most of the time							6	5	7	3
	Sometimes							62	52	53	56
	Never							28	42	38	40

ns = not statistically significant
Probabilities in parenthesis should be interpreted with caution since they were computed on small expected cell frequencies.

*Responses do not always total 100% because of some incomplete questionnaires.

**Question not asked in this questionnaire.

TABLE 14b

Selected Parent Questionnaire Items for All Disadvantaged 4-year-old Children

(by quartiles)

		P		Pretest Questionnaire				Posttest Questionnaire			
		Pre	Post	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Hours child watched TV yesterday.	6 or more	ns	ns	10%	6%	6%	14%	4%	9%	7%	8%
	4 or 5			11	15	16	14	19	16	10	28
	2 or 3			36	34	31	38	37	41	48	40
	Less than 2			37	45	40	34	38	32	33	23
Does child ever watch local ETV?	Yes	.02	(.001)	34	33	49	51	46	92	94	97
Mother watches Sesame Street with child.	Almost always		.01	**				4	29	20	33
	Usually							7	11	17	10
	Sometimes							22	42	54	46
	Hardly ever							13	17	10	10
	No Sesame Street							54	0	0	0
Mother and child talk about Sesame Street.	Almost always		.001	**				6	25	25	32
	Usually							7	21	19	32
	Sometimes							19	36	49	33
	Hardly ever							15	17	8	3
	No Sesame Street							54	0	0	0
Child plays games based on Sesame Street.	Almost always		(.01)	**				1	6	10	15
	Usually							3	6	16	13
	Sometimes							16	41	49	44
	Hardly ever							13	21	16	17
	Don't know							14	25	10	12
	No Sesame Street							54	0	0	0
How helpful is Sesame Street for your child?	Not helpful		(.001)	**				2	1	0	0
	Somewhat							14	20	19	6
	Very							21	70	78	92
	Don't know							9	9	3	1
	No Sesame Street							54	0	0	0

TABLE 14b

Selected Parent Questionnaire Items for All Disadvantaged 4-year-old Children

(by quartiles)

		P		Pretest Questionnaire				Posttest Questionnaire			
		Pre	Post	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Kind of TV on which child watches Sesame Street.	Black & white		ns	**				41%	86%	85%	81%
	Color							6	11	13	15
	No Sesame Street							54	0	0	0
Employment of male head of household.	35 hours a week or more	ns		45%	53%	68%	70%	**			
	10-35 hours			3	6	2	3				
	Less than 10 hours			0	2	1	0				
	Other			52	40	29	27				
Number of people living in child's home.	2	ns		5	3	4	5	**			
	3-4			28	34	28	36				
	5-6			25	27	41	32				
	7-8			30	28	29	16				
	Over 8			9	6	8	10				
Number of rooms in house.	1-2	(.05)		3	2	3	3	**			
	3-4			40	39	39	30				
	5-6			50	51	48	55				
	7-8			3	6	9	11				
	Over 8			2	0	0	1				

TABLE 14c

Selected Parent Questionnaire Items for All Disadvantaged 5-Year-Old Children

(by quartiles)

		P		Pretest Questionnaire*				Posttest Questionnaire*			
		Pre	Post	Q1 N=36	Q2 N=26	Q3 N=32	Q4 N=36	Q1 N=30	Q2 N=28	Q3 N=32	Q4 N=36
How often child uses art things at home.	Once a day	ns	(.02)	24%	42%	59%	42%	20%	43%	31%	31%
	Several a week			33	46	41	44	40	39	59	58
	Once a week or less			15	8	0	8	19	18	9	8
	Never			9	4	0	3	7	0	0	0
	Don't know			18	0	0	3	13	0	0	0
What mother usually does with child.	Plays with him	ns	ns	61	42	63	75	57	68	84	81
	Reads to him	ns	.05	55	50	59	50	47	64	78	81
	Housework	ns	ns	70	81	78	75	80	89	84	86
	Watches TV	ns	ns	18	0	6	17	30	18	19	22
	Watches TV with him	ns	ns	70	85	75	69	90	86	84	92
	Reads by herself	ns	ns	21	15	13	14	43	39	34	25
How often child is read to.	Once a day	ns	(.05)	6	19	25	14	7	11	16	22
	Several a week			18	27	47	39	30	32	41	39
	Once a week or less			55	35	19	39	30	46	41	39
	Never			9	4	3	0	10	7	0	0
	Don't know			12	15	6	8	23	4	3	0
Do most children have to be forced to learn?	Almost all the time	ns	ns	3	15	3	6	7	7	13	0
	Most of the time			9	8	0	8	7	14	6	0
	Sometimes			73	54	78	67	73	64	59	67
	Never			6	19	19	17	13	11	22	33
Does your child have to be forced to learn?	Almost all the time		(.001)	**				7	4	3	0
	Most of the time							0	29	3	0
	Sometimes							63	43	63	39
	Never							30	25	31	61

ns = not statistically significant
Probabilities in parenthesis should be interpreted with caution since they were computed on small expected cell frequencies.

*Responses do not always total 100% because of some incomplete questionnaires.

**Question not asked in this questionnaire.

TABLE 14c

Selected Parent Questionnaire Items for All Disadvantaged 5-Year-Old Children

(by quartiles)

		P		Pretest Questionnaire				Posttest Questionnaire			
		Pre	Post	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Hours child watched TV yesterday.	**6 or more**	ns	ns	6%	0%	0%	6%	17%	11%	3%	8%
	4 or 5			12	38	34	14	30	21	25	11
	2 or 3			33	38	25	39	13	36	50	50
	Less than 2			33	23	38	42	37	32	22	31
Does child ever watch local ETV?	**Yes**	ns	(.001)	27	31	44	47	60	89	97	97
Mother watches Sesame Street with child.	**Almost always**		(.05)		**			0	25	13	33
	Usually							10	18	6	28
	Sometimes							37	39	69	28
	Hardly ever							10	11	13	11
	No Sesame Street							43	7	0	0
Mother and child talk about Sesame Street.	**Almost always**		(.01)		**			7	29	16	33
	Usually							10	14	22	44
	Sometimes							27	46	56	19
	Hardly ever							13	11	6	3
	No Sesame Street							43	0	0	0
Child plays games based on Sesame Street.	**Almost always**		ns		**			3	11	3	19
	Usually							3	4	9	19
	Sometimes							23	39	56	47
	Hardly ever							17	18	16	8
	Don't know							40	29	16	6
	No Sesame Street							43	0	0	0
How helpful is Sesame Street for your child?	**Not helpful**		ns		**			0	0	0	0
	Somewhat							13	18	13	11
	Very							30	71	84	89
	Don't know							13	11	3	0
	No Sesame Street							43	0	0	0

TABLE 14c

Selected Parent Questionnaire Items for All Disadvantaged 5-Year-Old Children

(by quartiles)

		P		Pretest Questionnaire				Posttest Questionnaire			
		Pre	Post	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Kind of TV on which child watches Sesame Street.	Black & white		ns	**				50%	86%	81%	67%
	Color							7	14	13	31
	No Sesame Street							43	0	0	0
Employment of male head of household.	35 hours a week or more	ns		52%	54%	63%	50%	**			
	10-35 hours			6	12	0	6				
	Less than 10 hours			3	0	3	3				
	Other			39	35	34	42				
Number of people living in child's home.	2	ns		3	4	6	3	**			
	3-4			15	23	38	28				
	5-6			48	35	34	44				
	7-8			18	15	19	29				
	Over 8			6	15	3	6				
Number of rooms in house.	1-2	ns		0	12	3	0	**			
	3-4			36	19	25	39				
	5-6			52	50	66	50				
	7-8			3	12	3	8				
	Over 8			0	4	3	0				

4. Disadvantaged Children Grouped by Sex

One of the major problems in ghetto schools is that boys perform less well, at least on standardized achievement tests, than girls. School, perhaps, is less relevant to the life style of the disadvantaged boy than it is to the disadvantaged girl. It was hoped that Sesame Street, using a lively format, would appeal at least as much to boys as to girls. In this part of Section A, some descriptions and comparisons will be provided.

The test data on the 377 disadvantaged boys and 354 disadvantaged girls are presented in Tables 15a and b. Figures 4a-i present some of these data graphically. Highlights of these data will be presented in the following list of comments, but this list will be far from exhaustive.

-- Disadvantaged boys seemed to view Sesame Street slightly more than disadvantaged girls. However, this slight difference was not significant.

-- At pretest on the Grand Total, girls in Q1, Q3, and Q4 had somewhat higher scores than boys. At posttest girls in every quartile had higher mean scores than comparable boys' groups. In Q2, girls gained 35.1 points, boys 24.5 points. Girls gained very slightly more than boys in Q1 and Q4, the reverse being true in Q3.

In short, the evidence at the descriptive level over all tests seems to suggest that girls were somewhat ahead of boys at pretest and at least retained that lead. Observations of children watching the show (see below in part 11 of this

TABLE 15a

Pretest and Gain Scores for All Disadvantaged Boys
(by quartiles)
N = 377

Test & Subtest	Maximum Possible Score	Q_1 N= 96				Q_2 N= 103				Q_3 N= 94				Q_4 N= 84			
		Pretest		Gain		Pretest		Gain		Pretest		Gain		Pretest		Gain	
		Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Grand Total	203	74.18	23.64	17.61	19.62	85.88	30.07	24.50	21.54	86.40	28.76	38.68	26.78	97.13	33.26	46.85	26.88
Body Parts Total	32	17.32	6.33	3.71	5.07	20.01	6.15	4.01	5.41	19.86	6.42	5.35	5.60	22.39	5.70	5.35	4.55
Pointing to Body Parts	5	2.83	1.41	0.75	1.26	3.33	1.38	0.60	1.22	3.34	1.17	0.69	1.25	3.82	1.16	0.69	1.04
Naming Body Parts	15	7.74	3.00	1.40	2.63	9.12	.279	1.28	2.63	9.14	2.74	1.94	2.43	10.35	2.23	1.75	1.87
Function of Body Parts(Point)	8	4.79	2.25	0.90	2.42	5.12	2.13	1.45	2.06	5.18	2.25	1.64	2.35	5.51	2.16	1.92	2.05
Function of Body Parts(Verbal)	4	1.96	1.54	0.67	1.66	2.45	1.45	0.68	1.55	2.21	1.55	1.09	1.56	2.71	1.49	0.99	1.39
Letters Total	58	12.38	5.96	4.36	7.04	14.34	8.05	6.98	8.33	15.56	7.63	11.90	11.48	17.62	10.23	15.81	11.33
Recognizing Letters	8	2.07	1.56	0.70	2.42	2.15	1.83	1.45	2.32	2.67	1.96	2.10	2.68	3.00	2.21	2.44	2.70
Naming Capital Letters	16	1.06	2.45	1.26	3.28	1.64	3.58	2.42	4.55	1.62	3.26	5.33	5.43	2.66	4.51	7.40	5.80
Naming Lower Case Letters	8	0.44	1.26	0.27	1.52	0.63	1.48	0.78	1.99	0.57	1.35	1.98	2.45	1.00	1.81	2.52	2.58
Matching Letters in Words	4	2.82	1.15	0.66	1.06	2.96	1.31	0.70	1.24	3.12	1.13	0.66	1.06	3.24	1.03	0.64	1.08
Recognizing Letters in Words	4	1.22	1.02	0.31	1.23	1.32	1.06	0.61	1.50	1.46	1.12	0.71	1.49	1.52	1.26	1.01	1.62
Initial Sounds	4	0.71	0.75	0.16	1.12	0.80	0.75	0.17	1.16	0.93	0.85	0.17	1.20	0.96	0.84	0.21	1.18
Reading Words	6	0.02	0.20	0.02	0.38	0.11	0.67	0.01	0.69	0.04	0.25	0.17	0.52	0.09	2.40	0.32	0.68
Forms Total	20	8.30	3.38	2.57	3.50	10.21	4.54	2.92	4.46	9.84	3.61	4.41	4.07	10.64	3.63	5.42	3.62
Recognizing Forms	4	1.85	1.15	0.44	1.65	2.23	1.28	0.44	1.70	1.98	1.22	0.84	1.69	2.22	1.17	1.04	1.54
Naming Forms	4	0.89	1.07	0.55	1.35	1.46	1.44	0.80	1.61	1.17	1.18	1.40	1.55	1.48	1.43	1.76	1.46
Numbers Total	54	15.74	7.43	4.98	7.00	19.08	9.96	7.01	8.36	19.36	10.47	10.76	10.46	23.44	11.53	12.83	9.76
Recognizing Numbers	6	1.55	1.35	0.59	1.59	1.78	1.49	1.10	1.96	1.84	1.68	1.48	2.31	2.35	1.80	1.65	2.02
Naming Numbers	15	0.92	2.25	0.95	2.60	1.64	3.02	1.98	3.74	1.60	3.51	4.05	4.43	3.18	3.93	5.04	4.57
Numerosity	6	2.89	1.45	0.81	1.73	3.57	1.77	0.57	1.69	3.59	1.72	0.80	1.88	4.07	1.76	1.01	1.49
Counting	9	4.22	2.32	1.15	2.30	4.85	2.69	1.58	2.57	5.07	2.57	1.80	2.72	5.31	2.73	2.02	2.63
Addition and Subtraction	7	1.21	1.26	0.71	1.70	1.67	1.64	0.67	1.57	1.64	1.67	0.97	1.77	2.06	1.97	1.07	1.84
Matching Subtest	11	7.48	2.77	1.76	2.81	8.35	2.72	1.33	2.72	8.94	2.14	0.96	1.92	9.14	1.97	1.12	2.04
Relational Terms Total	17	9.26	3.18	0.77	3.25	10.08	3.21	1.21	3.26	10.14	2.78	1.64	3.21	10.35	3.29	2.50	3.37
Amount Relationships	9	4.43	1.72	0.54	1.98	4.61	2.04	0.79	2.39	4.68	1.78	0.89	2.33	4.85	2.07	1.17	2.25
Size Relationships	2	1.68	0.61	0.08	0.69	1.78	0.44	0.06	0.57	1.71	0.52	0.20	0.56	1.68	0.49	0.24	0.53
Position Relationships	5	2.78	1.62	0.03	1.74	3.16	1.36	0.34	1.51	3.20	1.30	0.48	1.38	3.35	1.29	0.82	1.45
Sorting Total	6	2.15	1.38	0.70	1.81	2.65	1.49	0.73	1.75	2.54	1.60	1.34	1.71	2.64	1.33	1.64	1.62
Classification Total	24	11.13	4.41	1.30	4.41	11.97	5.04	2.38	5.00	11.82	4.74	4.54	4.87	12.67	4.77	5.21	4.87
Classification by Size	2	1.16	0.74	0.15	1.05	1.10	0.79	0.20	0.96	1.13	0.76	0.27	0.92	1.16	0.72	0.37	0.86
Classification by Form	6	2.05	1.35	0.51	1.50	2.47	1.64	0.70	1.68	2.49	1.46	1.22	1.85	2.52	1.46	1.48	1.72
Classification by Number	6	1.98	1.40	0.33	1.59	2.25	1.40	0.37	1.77	2.27	1.52	0.95	1.79	2.75	1.60	1.02	1.98
Classification by Function	9	5.44	1.96	0.68	2.23	5.68	2.12	1.14	2.40	5.48	1.97	1.93	2.10	5.81	1.97	2.02	1.98
Puzzles Total	5	1.96	1.49	0.27	1.93	2.40	1.36	0.53	1.62	2.20	1.26	0.79	1.49	2.58	1.42	0.94	1.41
Peabody Raw Score (Pretest only)	80	31.76	10.54			34.24	10.67			33.84	12.30			38.61	12.53		
Peabody Mental Age (Months)	--	40.05	11.11			42.73	12.94			42.98	14.17			48.42	15.86		
Hidden Triangles Total (Posttest)	10	4.44	1.45			4.58	1.70			4.79	1.31			4.89	1.50		
Which Comes First Total (Posttest)	12	4.53	2.30			4.82	2.36			5.74	2.64			6.90	2.73		

TABLE 15b

Pretest and Gain Scores for All Disadvantaged Girls

(by quartiles)

N = 354

Test & Subtest	Maximum Possible Score	Q_1 N=105				Q_2 N=97				Q_3 N=77				Q_4 N= 75			
		Pretest		Gain		Pretest		Gain		Pretest		Gain		Pretest		Gain	
		Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Grand Total	203	77.45	26.14	19.13	20.37	82.00	24.70	35.12	22.17	90.36	25.86	37.82	24.30	98.97	32.13	48.11	25.08
Body Parts Total	32	18.82	6.68	4.01	6.20	19.96	6.37	4.93	5.51	22.56	5.47	4.03	5.36	22.79	6.24	5.01	4.91
Pointing to Body Parts	5	3.29	1.35	0.66	1.47	3.69	1.26	0.59	1.22	4.12	1.00	0.30	1.15	3.96	1.11	0.68	1.04
Naming Body Parts	15	8.66	2.81	1.33	2.69	9.49	2.97	1.57	2.77	10.38	2.22	1.43	2.73	10.55	2.51	1.75	2.50
Function of Body Parts (Point)	8	4.75	2.53	1.28	2.79	4.71	2.39	1.69	2.55	5.55	2.02	1.42	1.96	5.50	2.44	1.83	2.09
Function of Body Parts (Verbal)	4	2.12	1.58	0.74	1.80	2.06	1.38	1.08	1.44	2.52	1.51	0.88	1.54	2.78	1.52	0.76	1.24
Letters Total	58	14.07	6.35	4.01	7.85	14.08	6.61	9.81	9.78	14.78	5.94	12.34	10.47	18.79	10.87	16.36	11.21
Recognizing Letters	8	2.51	1.83	0.54	2.26	2.48	1.91	1.33	2.38	2.44	1.62	2.16	2.45	3.15	2.20	2.71	2.55
Naming Capital Letters	16	1.51	2.59	1.42	3.55	1.20	2.81	4.27	5.04	1.48	2.76	5.22	4.87	3.29	4.90	7.20	5.55
Naming Lower Case Letters	8	0.53	0.83	0.44	1.71	0.60	1.35	1.32	2.53	0.38	0.83	1.96	2.46	1.03	2.11	2.68	2.81
Matching Letters in Words	4	2.83	1.25	0.64	1.32	3.02	1.21	0.82	1.17	3.25	1.09	0.57	1.07	3.26	1.10	0.68	1.09
Recognizing Letters in Words	4	1.47	1.19	0.28	1.57	1.40	1.07	0.57	1.27	1.29	1.06	0.96	1.54	1.42	1.18	1.40	1.42
Initial Sounds	4	0.66	0.74	0.13	1.05	0.80	0.76	0.21	1.17	0.94	0.77	0.13	1.20	0.87	0.80	0.39	1.17
Reading Words	6	0.01	0.10	0.01	0.10	0.01	0.10	0.09	0.33	0.01	0.11	0.19	0.69	0.15	0.76	0.44	0.84
Forms Total	20	8.57	3.64	2.07	3.96	9.45	3.37	3.59	3.68	10.31	3.65	4.04	3.98	10.69	3.33	5.57	3.53
Recognizing Forms	4	2.06	1.24	0.36	1.62	2.04	1.11	0.42	1.58	2.32	1.25	0.48	1.73	2.04	1.12	1.13	1.51
Naming Forms	4	0.85	1.10	0.73	1.22	1.19	1.14	1.04	1.30	1.43	1.25	1.09	1.22	1.35	1.08	1.87	1.23
Numbers Total	54	16.61	8.86	5.71	7.07	17.85	8.71	10.41	7.67	20.65	9.67	10.97	8.71	24.01	11.22	13.53	9.00
Recognizing Numbers	6	1.73	1.45	0.61	1.82	1.71	1.55	1.52	1.88	1.81	1.34	1.77	1.78	2.41	2.02	2.03	2.18
Naming Numbers	15	1.34	2.89	1.28	3.22	1.47	2.84	2.88	4.14	1.65	2.53	3.60	3.43	3.13	4.38	5.36	4.36
Numerosity	6	2.99	1.54	0.98	1.62	3.33	1.70	1.34	1.64	3.73	1.69	1.16	1.76	3.99	1.77	1.24	1.49
Counting	9	4.42	2.66	1.31	2.38	4.64	2.54	2.12	2.15	5.51	2.47	1.69	2.32	6.15	2.21	1.44	2.07
Addition and Subtraction	7	1.37	1.32	0.58	1.40	1.67	1.58	0.71	1.54	2.29	1.88	0.55	1.90	2.22	1.63	1.04	1.75
Matching Subtest	11	8.23	2.69	0.75	2.84	8.24	2.46	1.85	2.32	8.94	2.20	1.21	2.23	9.59	1.28	0.87	1.35
Relational Terms Total	17	8.93	2.80	1.39	3.07	9.60	2.86	1.96	3.45	9.95	2.80	2.05	2.66	10.03	2.98	2.36	3.22
Amount Relationships	9	4.34	1.74	0.69	2.09	4.40	1.95	1.16	2.36	4.64	2.01	1.10	2.03	4.55	1.88	1.31	2.14
Size Relationships	2	1.60	0.55	0.09	0.70	1.72	0.47	0.21	0.50	1.74	0.47	0.19	0.46	1.81	0.40	0.11	0.48
Position Relationships	5	2.62	1.31	0.49	1.60	3.00	1.32	0.46	1.77	3.10	1.26	0.61	1.42	3.21	1.35	0.73	1.55
Sorting Total	6	2.41	1.27	0.30	1.87	2.42	1.38	0.91	1.95	2.57	1.36	1.40	1.87	2.81	1.41	1.68	1.73
Classification Total	24	10.15	3.93	1.92	4.41	11.81	4.19	3.74	4.53	12.32	4.59	4.69	4.94	13.12	4.65	5.45	4.55
Classification by Size	2	1.02	0.74	-0.01	1.03	1.05	0.78	0.40	0.91	1.13	0.82	0.36	0.92	1.27	0.73	0.45	0.84
Classification by Form	6	1.93	1.17	0.50	1.54	2.41	1.36	1.06	1.82	2.58	1.36	1.19	1.70	2.83	1.46	1.56	1.42
Classification by Number	6	1.80	1.20	0.59	1.70	2.21	1.20	0.61	1.77	2.32	1.37	1.16	1.87	2.51	1.49	1.20	1.72
Classification by Function	9	4.98	1.93	0.79	2.29	5.57	2.04	1.64	2.08	5.78	1.84	1.88	2.08	5.99	1.94	2.00	1.97
Puzzles Total	5	1.81	1.30	0.59	1.76	1.71	1.28	1.02	1.65	2.03	1.34	1.00	1.65	2.23	1.46	1.01	1.77
Peabody Raw Score (Pretest only)	80	31.92	11.78			33.51	12.38			34.23	12.25			37.81	11.42		
Peabody Mental Age (Months)	--	40.68	12.23			42.27	13.77			43.34	13.96			46.76	13.68		
Hidden Triangles Total (Posttest)	10	4.05	1.50			4.56	1.53			4.78	1.59			4.79	1.46		
Which Comes First Total (Posttest)	12	4.54	2.21			5.42	2.62			6.32	2.86			6.86	2.87		

section) indicate that girls viewed somewhat more intently than boys, but somewhat less actively in terms of physical involvement. Sex is also entered as an independent factor in the statistical analyses. Therefore, this topic will recur in the later parts of the results chapter.

-- The mental ages of the sexes seem to be comparable, boys being slightly higher in Q2 and Q4 and girls in Q1 and Q3. Thus, mental age was not a factor accounting for the marginally greater gains for girls.

-- Both boys and girls gained more if they viewed more. The higher viewing quartiles tended to have higher pretest scores too, but this was not invariable. Mean pretest Grand Totals for Q2 and Q3 boys were virtually the same, but Q2 boys gained 24.5 and Q3 boys gained 38.7.

-- Ceiling effects seemed to be operating in the Body Parts Test especially the Q4 group.

-- In the Letters Test, girls seem to have learned somewhat more than boys except in Q1 where there was very little watching anyway.

-- There were a number of instances throughout the tests where boys or girls had virtually the same pretest score from one quartile level to the next but where the higher viewing quartile gained more than the lower viewing quartile. The reader is encouraged to seek out such examples himself.

-- Performance on the Reading Words subtest (a transfer task) seems to have been affected by viewing more for girls than for boys.

The two major phenomena -- girls and boys both being positively affected by amount of viewing and girls tending to outgain boys slightly but consistently -- seem to operate across most tests. For example, Relational Terms, Sorting, and Classification all illustrate these general findings.

It was expected that the boys and girls would be similar with respect to many of the background variables assessed by the parent questionnaires. Tables 16a and b present the scales derived from the parent questionnaires separately for boys and for girls.

- Parental expectations were higher for the high viewing groups, and this was true for boys (p<.01 at pretest and at posttest) and for girls (p<.01 at pretest and at posttest).
- Results on Child Affluence, Parent Affluence, and Educational Uses Indices were quite similar for boys and for girls. Differences were generally quite small with no consistent trend being noted.
- The major SES index, mean years of parents' education, was the one scale which showed some differences between boys and girls. The total mean for parents of boys was three months less than for parents of girls, and in Q4 the boys' parents had an average of four months less education than the girls' parents. With such large N's in each group, these differences, though small, probably represent a bias in favor of the girls; but there is no obvious explanation for the differences.

Responses to selected items from the parent questionnaires are presented in Tables 17a and b. Again there is clear evidence from these tables that amount of viewing was significantly associated with such variables as the amount mothers read to their children and whether or not mothers talked about Sesame Street with the children. But, in general, this confounding was as manifest for boys as it was for girls.

In summary, girls seem to have to outperformed boys slightly. Their pretest scores were slightly higher, and they gained slightly more. This did not seem to be due to mental age nor to general home background factors (except, perhaps, to amount of the parents' education where girls' parents had slightly more education than boys'). It had been hoped that the show would have appealed to boys at least as much as it did to girls, and in fact, boys watched about as much as girls did (though, as we shall see, with somewhat less visual concentration but more relevant motor activity). The question of the sex effect with respect to amount learned will be discussed further in Section C.

FIGURE 4a

Pretest and Gain on Total Test Score for All Disadvantaged Boys and Girls (by viewing quartiles)

Male N=377

Female N=354

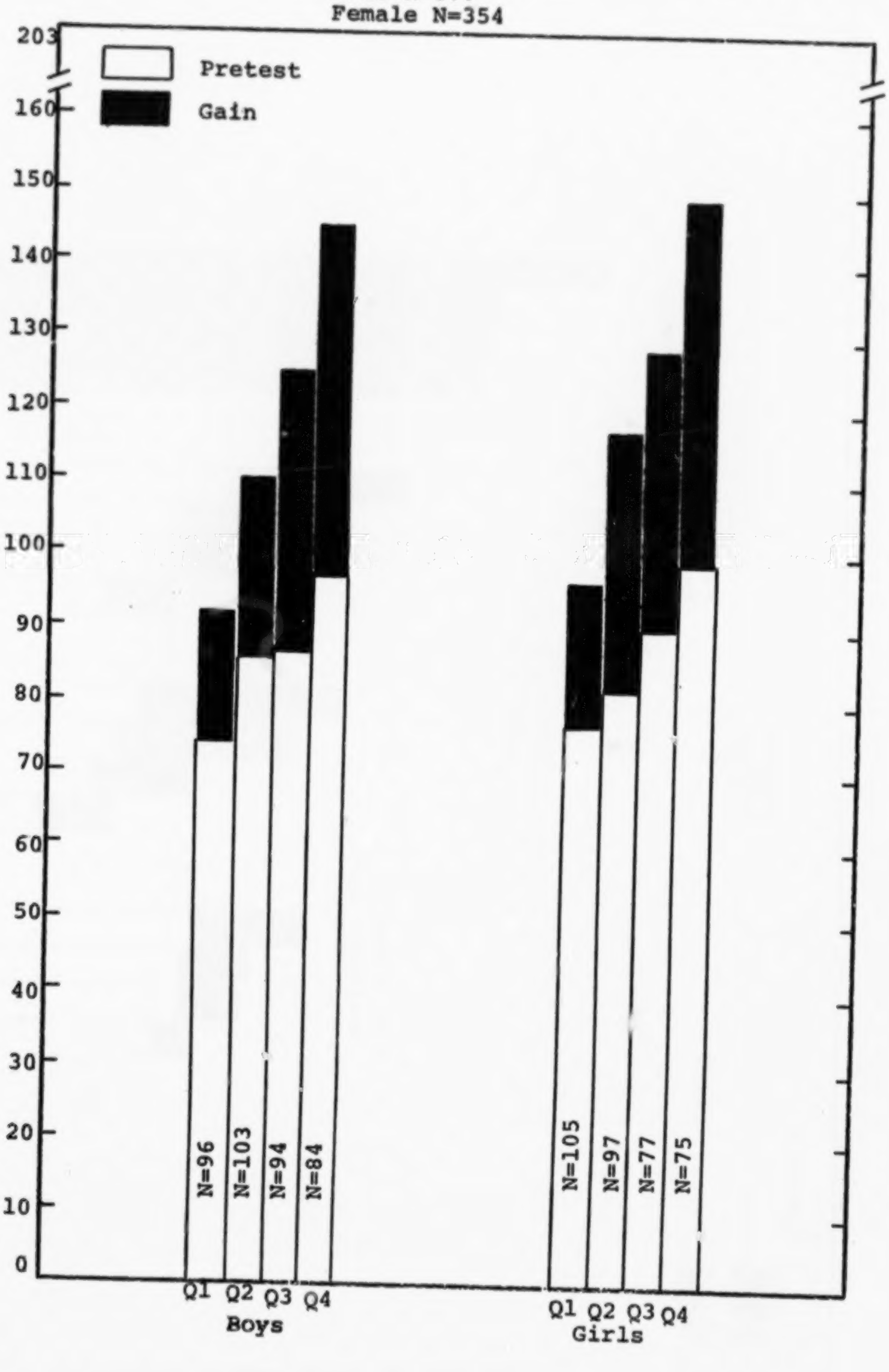


FIGURE 4b

Selected Pretest and Gain Scores for All Disadvantaged Boys

(by viewing quartiles) Q1=96 Q2=103 Q3=94 Q4=85

Dashed lines beneath test titles indicate maximum possible scores

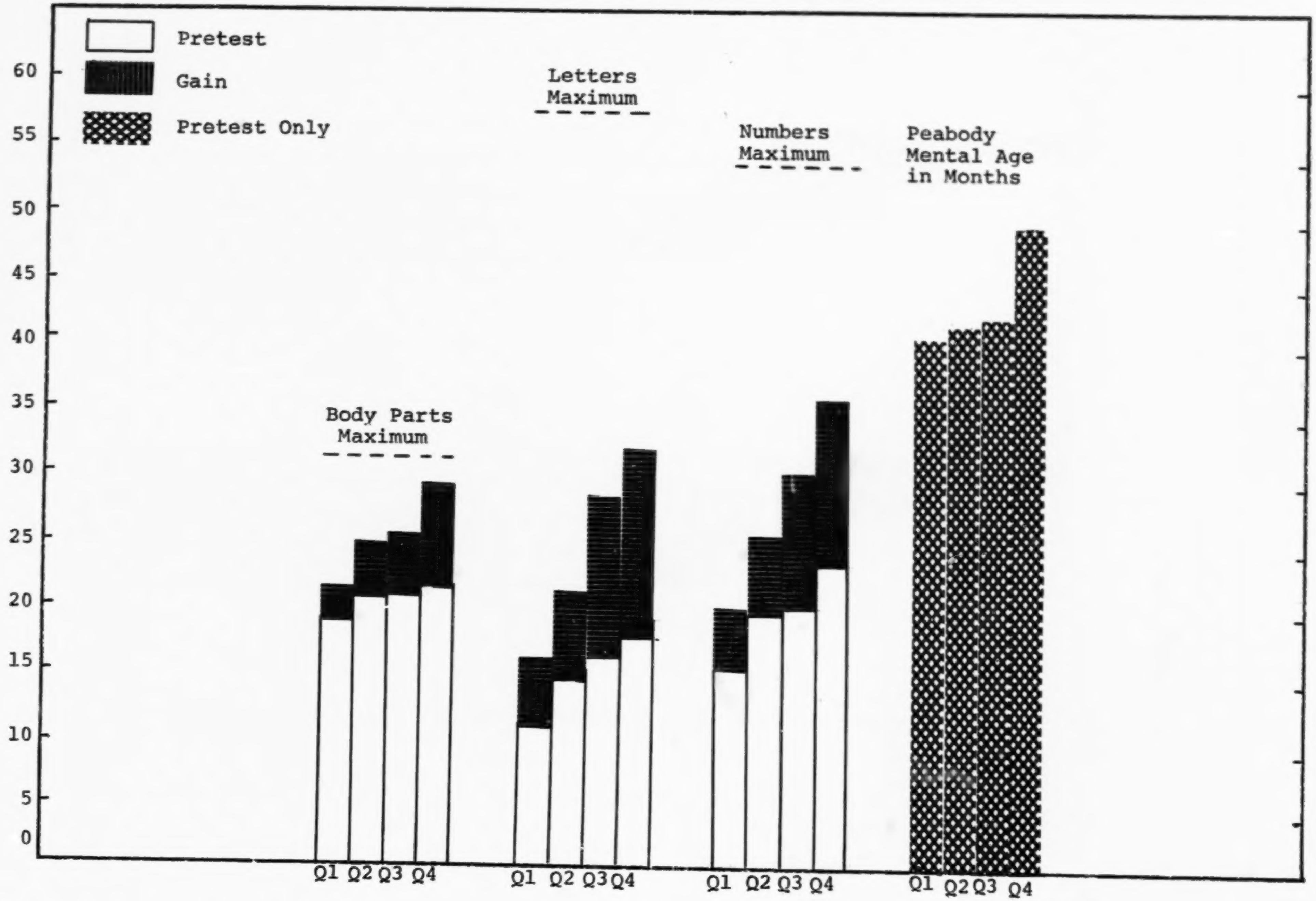


FIGURE 4c

Selected Pretest and Gain Scores for All Disadvantaged Boys

(by viewing quartiles) Q1=96 Q2=103 Q3=94 Q4=85

Dashed lines beneath test titles indicate maximum possible scores

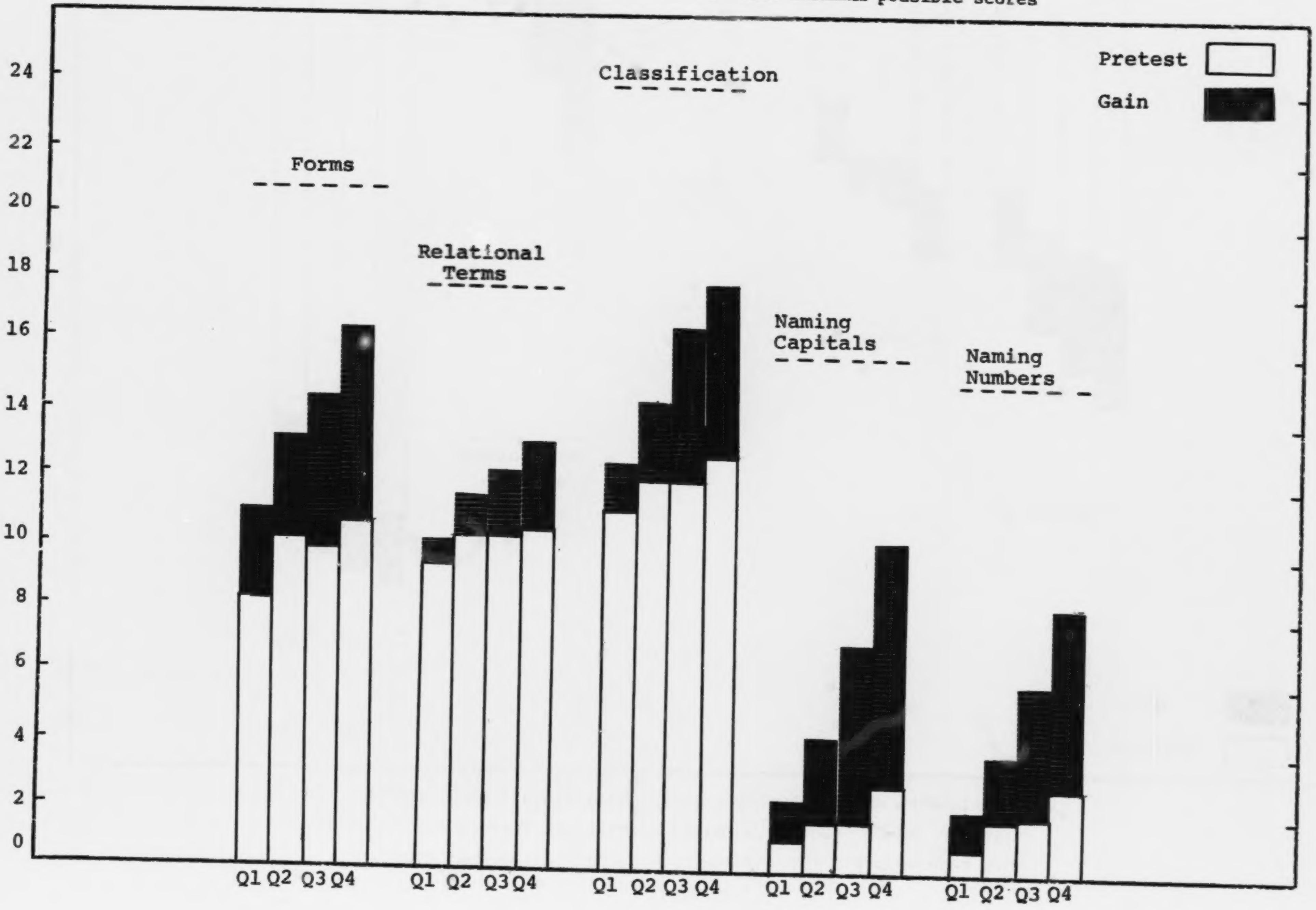


FIGURE 4d

Selected Pretest and Gain Scores for All Disadvantaged Boys

(by viewing quartiles) Q1=96 Q2=103 Q3=94 Q4=85

Dashed lines beneath test titles indicate maximum possible scores

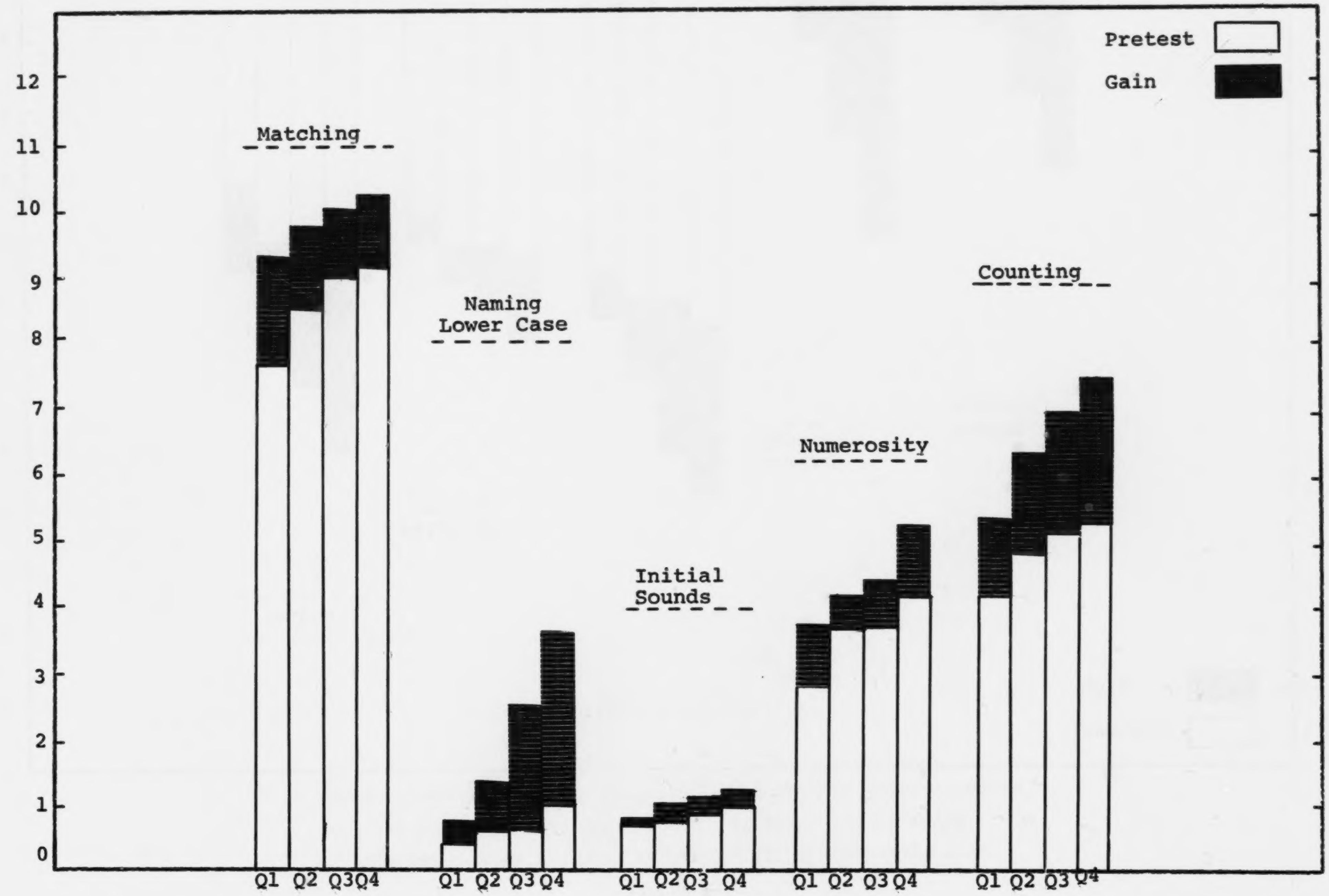


FIGURE 4e

Selected Pretest and Gain Scores for All Disadvantaged Boys

(by viewing quartiles) Q1=96 Q2=103 Q3=94 Q4=85

Dashed lines beneath test titles indicate maximum possible scores

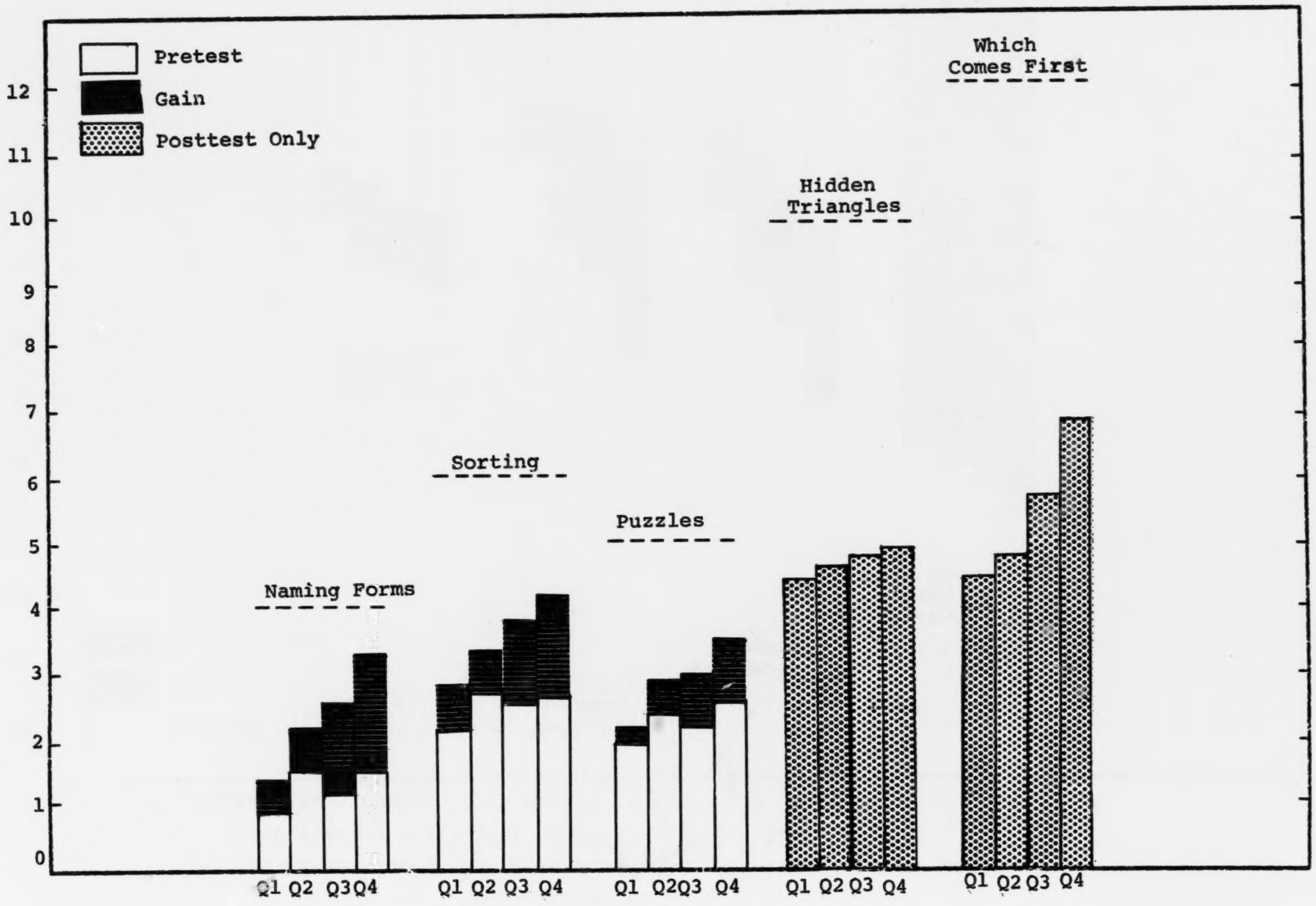


FIGURE 4f

Selected Pretest and Gain Scores for All Disadvantaged Girls

(by viewing quartiles) Q1=105 Q2=97 Q3=77 Q4=75

Dashed lines beneath test titles indicate maximum possible scores.

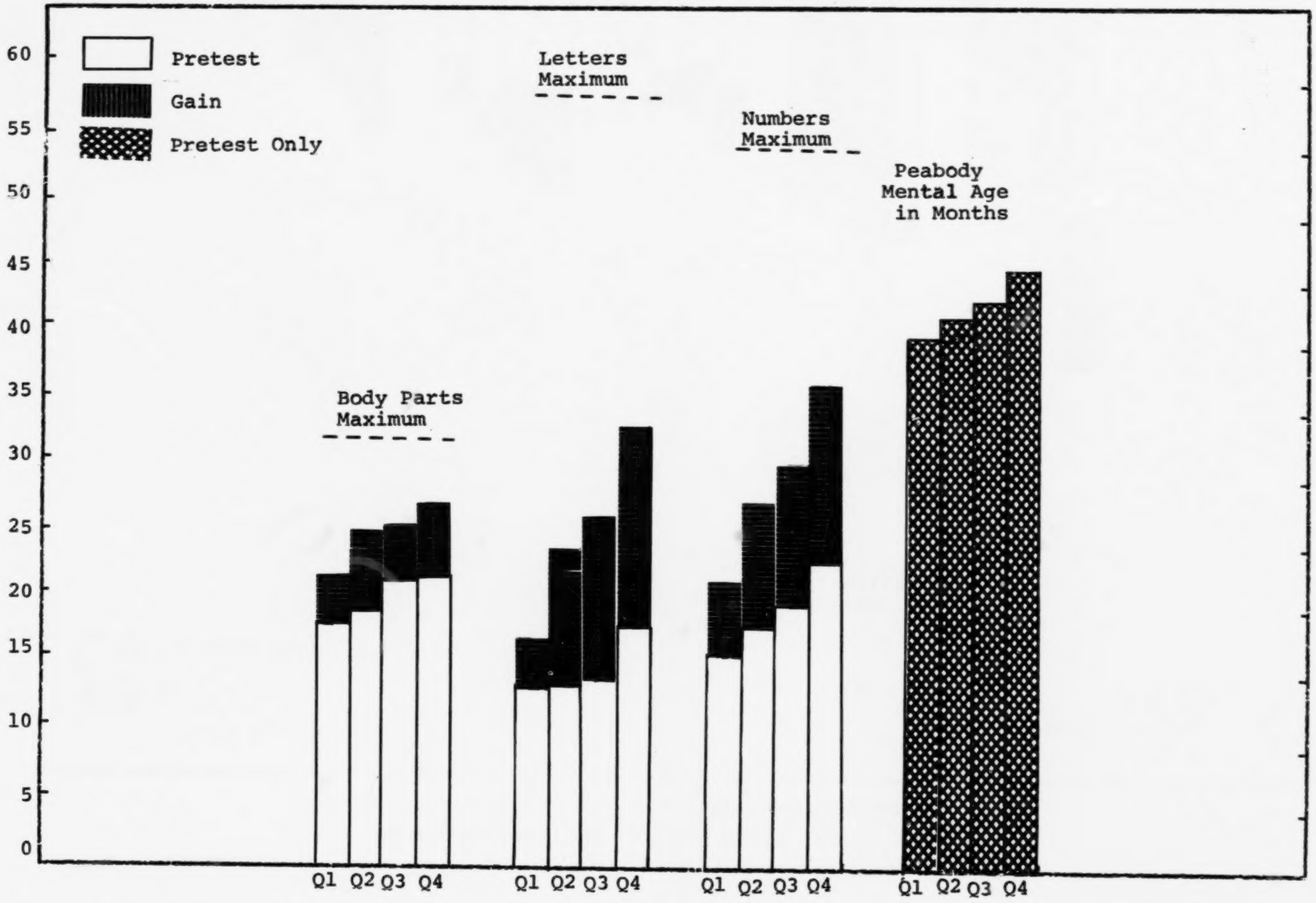


FIGURE 4g

Selected Pretest and Gain Scores for All Disadvantaged Girls

(by viewing quartiles) Q1=105 Q2=97 Q3=77 Q4=75

Dashed lines beneath test titles indicate maximum possible scores.

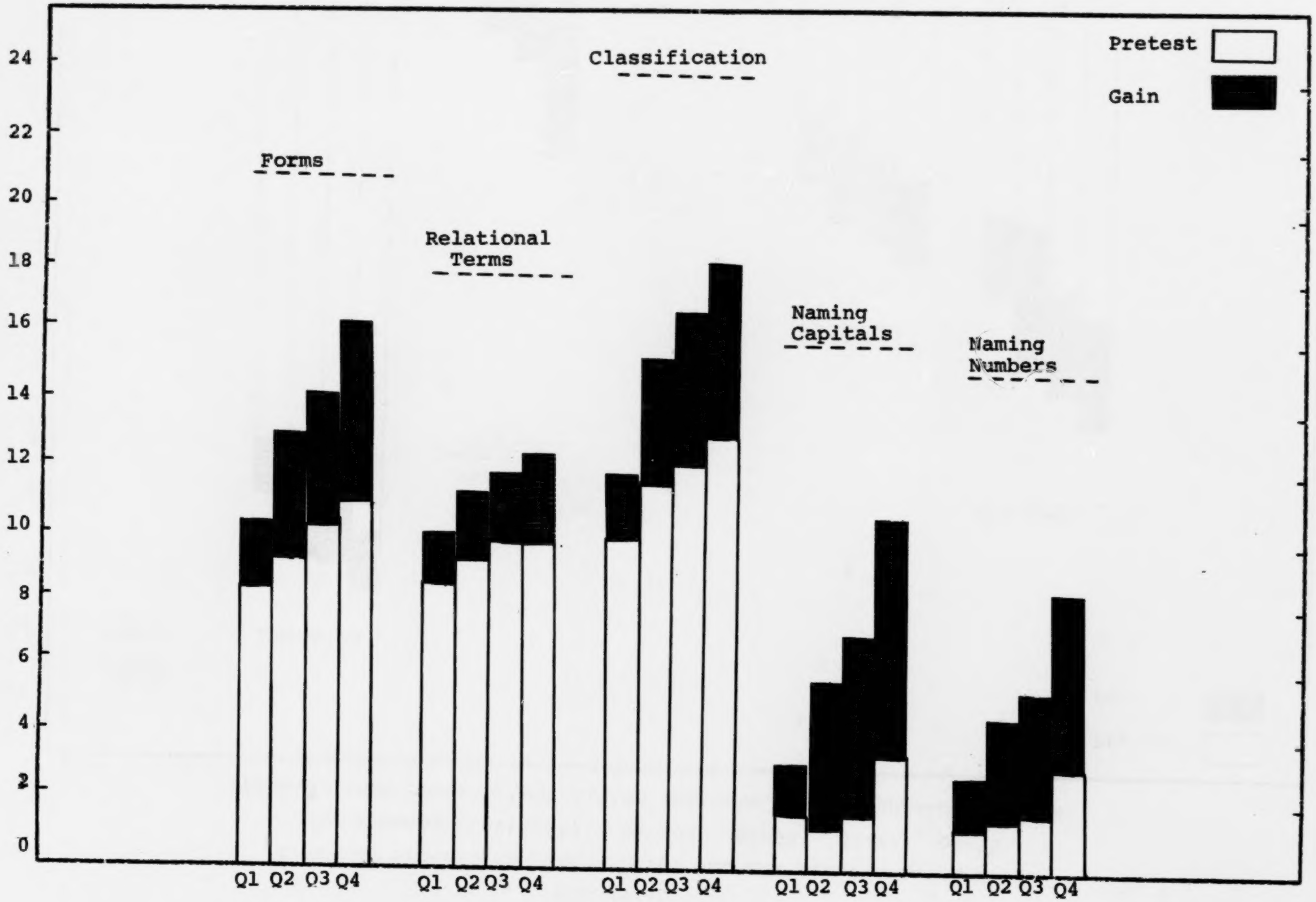


FIGURE 4h

Selected Pretest and Gain Scores for All Disadvantaged Girls

(by viewing quartiles) Q1=105 Q2=97 Q3=77 Q4=75

Dashed lines beneath test titles indicate maximum possible scores.

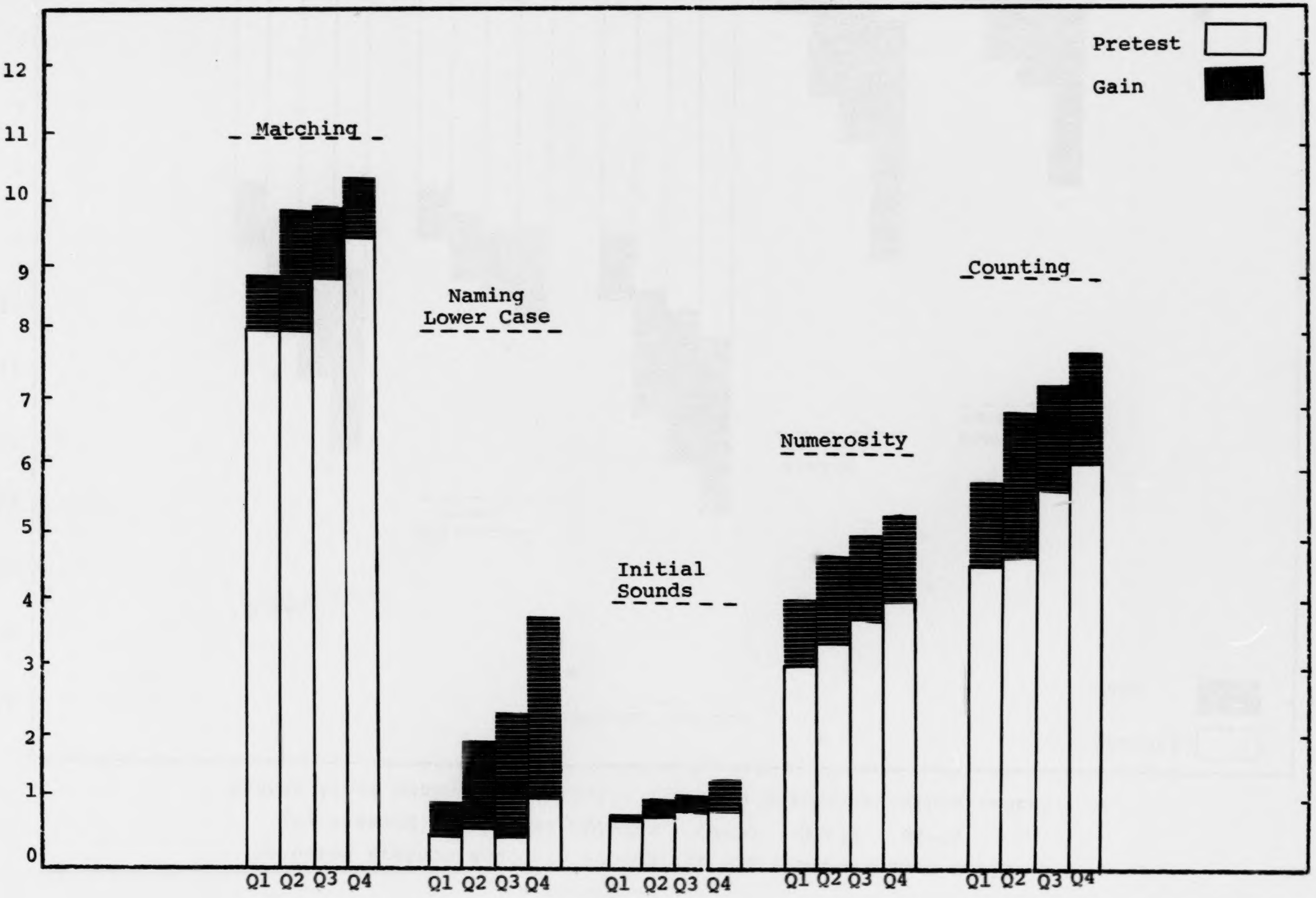


FIGURE 4i

Selected Pretest and Gain Scores for All Disadvantaged Girls

(by viewing quartiles) Q1=105 Q2=97 Q3=77 Q4=75

Dashed lines beneath test titles indicate maximum possible scores.

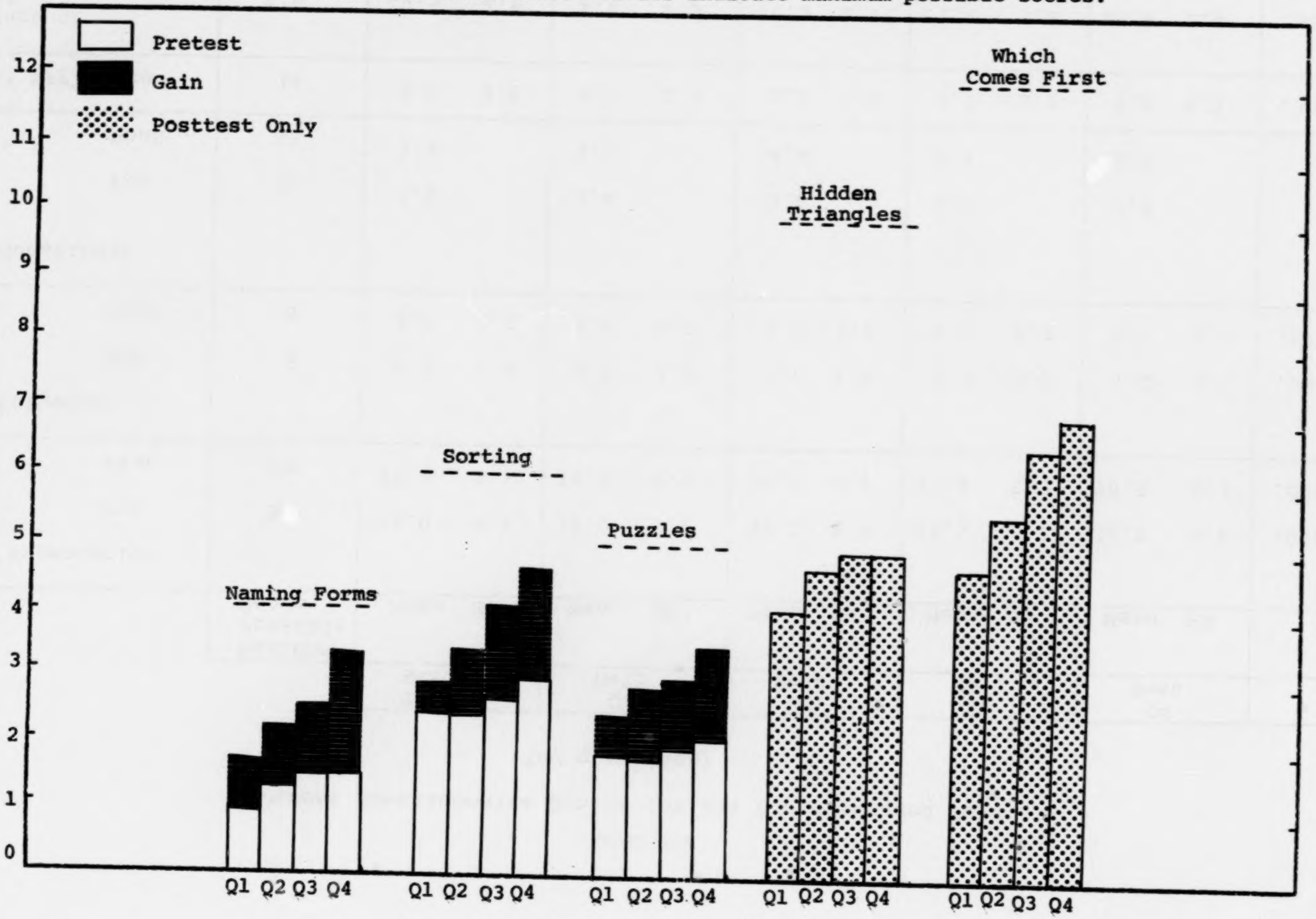


TABLE 16a

Parent Questionnaire Scales for All Disadvantaged Boys

(by quartiles)

	Maximum Possible Score	Total N=300		Q1 N=75		Q2 N=82		Q3 N=77		Q4 N=66		P
		Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	
Parents'Expectation												
Pre	50	36.0	8.2	32.0	9.1	36.2	8.9	37.5	6.1	36.0	8.2	.000
Post	50	37.1	5.9	34.4	6.6	37.6	5.5	37.8	5.2	38.5	5.3	.000
Child Affluence												
Pre	6	3.3	1.6	2.7	1.8	3.6	1.6	3.5	1.5	3.6	1.5	.001
Post	6	3.7	1.3	3.5	1.5	4.0	1.2	3.5	1.2	3.7	1.3	.078
Child Educational Uses												
Pre	21	3.6		3.4		3.6		3.7		3.8		
Post	21	3.9		3.6		4.4		3.9		3.7		
Parents' Affluence	14	8.1	2.6	6.7	2.3	8.2	2.7	8.7	2.3	8.9	2.7	.000
Mean Years of Parents' Education	16	10.4	2.6	9.6	2.8	10.3	2.8	11.2	1.8	10.8	2.6	.001

TABLE 16b

Parent Questionnaire Scales for All Disadvantaged Girls

(by quartiles)

	Maximum Possible Score	Total N=294		Q1 N=86		Q2 N=74		Q3 N=69		Q4 N=65		P
		Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	
Parents'Expectation												
Pre	50	36.5	7.6	34.4	9.4	36.4	6.9	37.4	5.7	38.4	6.7	.008
Post	50	37.5	5.6	36.2	6.2	36.9	5.5	38.0	5.0	39.3	5.0	.004
Child Affluence												
Pre	6	3.4	1.6	2.9	1.7	3.3	1.7	3.8	1.4	3.7	1.5	.004
Post	6	3.7	1.3	3.7	1.4	3.6	1.3	3.9	1.3	4.2	1.2	.001
Child Educational Uses												
Pre	21	3.5		3.3		3.4		3.5		4.0		
Post	21	3.9		3.9		3.8		4.0		3.9		
Parents' Affluence	14	8.3	2.5	7.2	2.7	8.2	2.2	8.8	2.2	9.3	2.2	.000
Mean Years of Parents' Education	16	10.7	2.5	9.9	3.1	11.0	1.8	11.1	2.0	11.2	2.4	.003

TABLE 17a

Selected Parent Questionnaire Items for All Disadvantaged Boys

(by quartiles)

		P		Pretest Questionnaire*				Posttest Questionnaire*			
		Pre	Post	Q1 N=98	Q2 N=81	Q3 N=72	Q4 N=66	Q1 N=80	Q2 N=89	Q3 N=88	Q4 N=74
How often child uses art things at home.	Once a day	ns	ns	28%	31%	38%	33%	31%	34%	27%	26%
	Several a week			38	48	51	44	35	38	61	55
	Once a week or less			25	13	9	17	26	21	11	15
	Never			1	5	1	1	3	3	0	0
	Don't know			8	2	1	4	5	3	0	4
What mother usually does with child.	Plays with him	ns	ns	67	67	57	69	71	77	83	78
	Reads to him	ns	.02	56	49	61	53	51	66	68	74
	Housework	ns	.02	73	81	78	81	73	88	81	91
	Watches TV	ns	ns	20	10	15	19	23	20	22	28
	Watches TV with him	ns	ns	75	86	76	80	90	91	86	95
	Reads by herself	ns	ns	20	13	11	17	21	30	27	38
How often child is read to.	Once a day	ns	(.02)	21	20	28	24	10	16	13	26
	Several a week			26	29	34	31	33	35	43	32
	Once a week or less			33	34	25	30	38	40	40	34
	Never			9	7	1	1	13	2	1	1
	Don't know			11	11	11	13	8	7	3	7
Do most children have to be forced to learn?	Almost all the time	ns	ns	6	3	4	4	6	6	6	0
	Most of the time			8	14	13	10	11	6	8	4
	Sometimes			68	62	66	70	70	65	61	70
	Never			13	15	16	13	13	23	25	26
Does your child have to be forced to learn?	Almost all the time		ns		**			4	2	2	1
	Most of the time							9	10	3	0
	Sometimes							61	52	58	50
	Never							26	36	36	49

ns = not statistically significant.

Probabilities in parenthesis should be interpreted with caution since they were computed on small expected cell frequencies.

*Responses do not always total 100% because of some incomplete questionnaires.

**Question not asked in this questionnaire.

TABLE 17a

Selected Parent Questionnaire Items for All Disadvantaged Boys

(by quartiles)

		P		Pretest Questionnaire				Posttest Questionnaire			
		Pre	Post	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Hours child watched TV yesterday.	6 or more	ns	ns	9%	4%	3%	13%	9%	15%	6%	8%
	4 or 5			11	20	23	16	21	16	17	27
	2 or 3			38	38	33	39	36	39	43	36
	Less than 2			34	36	39	31	29	30	32	27
Does child ever watch local ETV?	Yes	ns	(.001)	28	34	48	50	63	94	93	100
Mother watches Sesame Street with child.	Almost always		ns		**			9	29	22	38
	Usually							10	11	15	9
	Sometimes							30	42	57	38
	Hardly ever							9	17	7	15
	No Sesame Street							43	0	0	0
Mother and child talk about Sesame Street.	Almost always		.001		**			14	26	24	27
	Usually							10	17	18	39
	Sometimes							20	39	51	32
	Hardly ever							14	18	7	1
	No Sesame Street							43	0	0	0
Child plays games based on Sesame Street.	Almost always		ns		**			1	9	10	9
	Usually							4	7	14	15
	Sometimes							23	43	48	51
	Hardly ever							18	21	14	12
	Don't know							13	20	15	12
	No Sesame Street							43	0	0	0
How helpful is Sesame Street for your child?	Not helpful		(.001)		**			1	0	0	0
	Somewhat							15	27	14	8
	Very							33	65	83	89
	Don't know							9	8	3	3
	No Sesame Street							43	0	0	0

TABLE 17a

Selected Parent Quentionnaire Items for All Disadvantaged Boys

(by quartiles)

		P		Pretest Questionnaire				Posttest Questionnaire			
		Pre	Post	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Kind of TV on which child watches Sesame Street.	Black & white		ns		**			54%	88%	88%	78%
	Color							4	9	9	18
	No Sesame Street							43	0	0	0
Employment of male head of household.	35 hours a week or more	ns		48%	57%	57%	64%		**		
	10-35 hours			6	7	1	3				
	Less than 10 hours			1	1	3	1				
	Other			45	35	39	31				
Number of people living in child's home.	2	ns		5	1	5	6		**		
	3-4			23	31	35	24				
	5-6			28	33	35	36				
	7-8			32	21	16	17				
	Over 8			9	13	6	7				
Number of rooms in house.	1-2	ns		4	3	4	4		**		
	3-4			39	32	39	31				
	5-6			49	49	48	53				
	7-8			5	11	8	1				
	Over 8			1	1	0	1				

TABLE 17b

Selected Parent Questionnaire Items for All Disadvantaged Girls

(by quartiles)

		P		Pretest Questionnaire*				Posttest Questionnaire*			
		Pre	Post	Q1 N=85	Q2 N=91	Q3 N=79	Q4 N=70	Q1 N=90	Q2 N=83	Q3 N=73	Q4 N=71
How often child uses art things at home.	Once a day	ns	ns	38%	43%	33%	47%	29%	35%	25%	42%
	Several a week			40	43	53	47	48	47	60	55
	Once a week or less			11	10	8	5	16	16	15	3
	Never			4	2	0	2	3	1	0	0
	Don't know			7	1	5	0	4	1	0	0
What mother usually does with child.	Plays with him	ns	ns	71	56	60	71	68	78	78	79
	Reads to him	ns	.01	56	46	54	56	57	63	75	82
	Housework	ns	ns	80	65	79	71	72	81	85	76
	Watches TV	ns	ns	17	17	10	12	24	16	29	21
	Watches TV with him	ns	ns	76	68	67	62	84	89	88	93
	Reads by herself	ns	ns	17	18	13	14	30	30	26	25
How often child is read to.	Once a day	(.05)	(.02)	10	19	17	17	16	19	15	24
	Several a week			37	25	46	47	32	31	48	45
	Once a week or less			28	38	25	27	37	42	32	28
	Never			8	10	6	2	6	2	0	1
	Don't know			17	9	7	8	10	5	5	1
Do most children have to be forced to learn?	Almost all the time	ns	ns	4	7	4	2	2	2	3	0
	Most of the time			15	12	11	8	8	8	8	8
	Sometimes			56	64	64	70	78	75	63	68
	Never			18	16	18	18	12	14	26	24
Does your child have to be forced to learn?	Almost all the time		ns		**			3	2	3	0
	Most of the time							6	7	8	4
	Sometimes							62	53	51	52
	Never							29	37	38	44

ns = not statistically significant.

Probabilities in parenthesis should be interpreted with caution since they were computed on small expected cell frequencies.

*Responses do not always total 100% because of some incomplete questionnaires.

**Question not asked in this questionnaire.

TABLE 17b

Selected Parent Questionnaire Items for All Disadvantaged Girls

(by quartiles)

		P Pre	P Post	Pretest Questionnaire Q1	Pretest Questionnaire Q2	Pretest Questionnaire Q3	Pretest Questionnaire Q4	Posttest Questionnaire Q1	Posttest Questionnaire Q2	Posttest Questionnaire Q3	Posttest Questionnaire Q4
Hours child watched TV yesterday.	6 or more	ns	.05	7%	4%	8%	9%	6%	6%	10%	10%
	4 or 5			16	17	19	15	18	18	14	20
	2 or 3			28	37	26	39	30	40	56	44
	Less than 2			44	42	39	36	46	35	21	25
Does child ever watch local ETV?	Yes	.02	(.001)	33	33	47	55	44	90	97	96
Mother watches Sesame Street with child.	Almost always		.001		**			0	28	23	32
	Usually							4	14	14	21
	Sometimes							31	41	52	42
	Hardly ever							14	14	11	4
	No Sesame Street							50	0	0	0
Mother and child talk about Sesame Street.	Almost always		(.001)		**			1	27	22	45
	Usually							6	24	22	25
	Sometimes							28	37	51	27
	Hardly ever							16	11	5	3
	No Sesame Street							50	0	0	0
Child plays games based on Sesame Street.	Almost always		(.001)		**			1	6	7	30
	Usually							1	5	15	14
	Sometimes							16	36	49	39
	Hardly ever							17	24	19	11
	Don't know							16	28	10	6
	No Sesame Street							50	1	0	0
How helpful is Sesame Street for your child?	Not helpful		(.001)		**			2	1	0	0
	Somewhat							14	15	15	4
	Very							22	75	84	96
	Don't know							11	10	1	0
	No Sesame Street							50	0	0	0

TABLE 17b

Selected Parent Questionnaire Items for All Disadvantaged Girls

(by quartiles)

		P		Pretest Questionnaire				Posttest Questionnaire			
		Pre	Post	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Kind of TV on which child watches Sesame Street.	Black & white		ns		**			40%	88%	78%	70%
	Color							9	12	18	27
	No Sesame Street							50	0	0	0
Employment of male head of household.	35 hours a week or more	ns		47%	48%	76%	65%		**		
	10-35 hours			3	5	1	5				
	Less than 10 hours			0	1	0	0				
	Other			50	46	22	30				
Number of people living in child's home.	2	ns		5	4	3	2		**		
	3-4			27	32	26	38				
	5-6			36	42	46	38				
	7-8			21	12	18	14				
	Over 8			7	10	7	8				
Number of rooms in house.	1-2	ns		1	3	1	0		**		
	3-4			42	35	32	33				
	5-6			49	54	57	55				
	7-8			1	5	8	11				
	Over 8			1	0	1	0				

5. Disadvantaged, At-Home Children

A major hope for Sesame Street was that it would be beneficial for at-home preschool-aged children. In this descriptive section of the results chapter, the data for this group as a whole will be presented. It will be recalled that initially the at-home children had been assigned to encouraged or to not-encouraged treatments. The results from these two sub-groups will also be presented here. (See Tables 18a-c.)

Table 18a presents test data for all at-home children. The major points to be noted from an examination of Table 18a and the graphic presentations of Figures 5a-e are listed below.

-- The mean gain of 51.2 for the highest viewing quartile (Q4) on Grand Total was very large in relation to the gains of high viewing quartiles in other subgroups of children.

-- Gains were greater as amount of viewing increased, with the largest differential gain occurring between Q3 and Q4. (13.8 difference.) Thus, for at-home disadvantaged children, viewing Sesame Street at least once a day seemed to be advantageous.

-- The more the at-home children viewed the show, the more likely they were to have had higher mental age scores at pretest. At this descriptive level there is no way to untangle viewing and mental age. However, Sections B and C of this chapter will do much to achieve that necessary goal.

Gains over almost all test totals continued to follow the dictum of: The more you watch the show, the more you learn. A more detailed reporting of the results for at-home children would be highly repetitious because they parallel quite closely the results for all disadvantaged children (see Part 2 above).

TABLE 18a

Pretest and Gain Scores for All Disadvantaged At-Home Children

(by quartiles)

N = 389

Test & Subtest	Maximum Possible Score	Q_1 N=105				Q_2 N=107				Q_3 N=89				Q_4 N=88			
		Pretest		Gain		Pretest		Gain		Pretest		Gain		Pretest		Gain	
		Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Grand Total	203	69.10	23.07	19.87	20.33	76.68	24.61	26.95	24.18	83.57	27.74	37.39	28.99	91.24	29.05	51.22	26.41
Body Parts Total	32	16.60	6.33	4.37	6.06	18.64	6.53	4.52	6.29	19.92	6.50	5.11	6.38	21.94	5.72	5.74	4.85
Pointing to Body Parts	5	2.90	1.40	0.64	1.41	3.31	1.37	0.55	1.30	3.46	1.27	0.56	1.37	3.78	1.16	0.81	1.13
Naming Body Parts	15	7.70	3.00	1.49	2.85	8.65	3.16	1.47	3.07	9.38	2.59	1.55	2.97	10.40	2.21	1.63	2.19
Function of Body Parts(Point)	8	4.30	2.37	1.30	2.76	4.57	2.39	1.67	2.57	4.92	2.21	1.83	2 20	5.13	2.35	2.30	2.15
Function of Body Parts(Verbal)	4	1.70	1.56	0.94	1.73	2.11	1.53	0.83	1.71	2.16	1.55	1.17	1.60	2.64	1.50	1.01	1.40
Letters Total	58	12.36	5.55	3.20	5.90	12.91	5.55	6.33	8.99	14.15	6.70	11.21	10.93	15.70	9.10	16.47	11.18
Recognizing Letters	8	2.18	1.62	0.37	2.31	2.22	1.66	0.98	2.22	234	1.63	2.16	2.70	2.57	1.95	2.64	2.65
Naming Capital Letters	16	0.95	2.12	0.52	2.16	0.94	2.37	1.99	4.79	1.18	2.75	4.57	5.01	1.99	4.02	7.43	5.68
Naming Lower Case Letters	8	0.48	1.19	0.09	1.29	0.51	1.27	0.53	2.19	0.45	1.29	1.73	2.33	0.66	1.63	2.51	2.67
Matching Letters in Words	4	2.60	1.26	0.90	1.30	2.70	1.27	0.94	1.25	3.04	1.25	0.70	1.16	3.08	1.15	0.78	1.21
Recognizing Letters in Words	4	1.36	1.10	0.30	1.45	1.35	1.08	0.40	1.55	1.35	1.15	0.70	1.52	1.33	1.20	1.32	1.64
Initial Sounds	4	0.73	0.78	0.17	1.20	0.80	0.76	0.20	1.22	0.96	0.77	0.11	1.16	0.82	0.74	0.36	0.92
Reading Words	6	0.02	0.20	0.02	0.37	0.10	0.66	-0.02	0.66	0.03	0.24	0.15	0.61	0.11	0.69	0.34	0.77
Forms Total	20	7.17	2.89	3.12	3.91	8.66	3.62	2.98	4.12	9.36	3.62	4.33	4.29	10.20	3.57	5.93	3.88
Recognizing Forms	4	1.68	1.12	0.64	1.70	2.04	1.27	0.21	1.73	1.96	1.16	0.73	1.68	2.10	1.25	1.10	1.62
Naming Forms	4	0.36	0.59	0.80	1.14	0.90	1.15	0.79	1.43	0.92	1.09	1.42	1.44	1.25	1.33	1.99	1.39
Numbers Total	54	14.30	7.61	5.11	7.26	16.44	8.67	7.69	8.71	19.04	10.56	9.93	10.61	21.76	10.45	14.23	9.30
Recognizing Numbers	6	1.49	1.29	0.52	1.61	1.66	1.43	0.86	1.83	1.82	1.59	1.12	2.09	2.27	1.77	1.82	1.95
Naming Numbers	15	0.85	2.34	0.55	2.23	1.36	2.90	1.55	3.96	1.56	3.26	3.13	4.12	2.67	3.86	5.15	4.51
Numerosity	6	2.72	1.40	1.05	1.63	3.09	1.72	1.04	1.86	3.61	1 81	0.88	2.00	3.84	1.64	1.24	1.52
Counting	9	3.70	2.46	1.37	2.31	4.07	2.53	2.10	2.64	4.94	2.69	1.84	2.83	5 41	2.52	2.15	2.25
Addition and Subtraction	7	1.08	1.21	0.66	1.52	1.34	1.53	0.79	1.63	1.74	1.62	0.90	1 78	1.90	1.59	1.13	1.77
Matching Subtest	11	7.50	2.75	1.50	3.00	7.76	2.73	2.07	2.58	8.39	2.57	1.46	2.33	9.02	1.95	1.18	2.01
Relational Terms Total	17	8.50	3.01	1.72	3.05	9.48	3.20	1.66	3.60	9.69	2.70	2.19	3.03	9.55	2.80	3.00	3.24
Amount Relationships	9	4.17	1.68	0.90	2.05	4.33	2.11	1.09	2.54	4.69	1.80	1.06	2.20	4.47	1.73	1.47	2 26
Size Relationships	2	1.53	0.59	0.15	0.68	1.67	0.51	0.18	0.61	1.66	0.54	0.25	0.57	1.66	0.48	0.23	0.54
Position Relationships	5	2.49	1.55	0.49	1.67	3.01	1.36	0.30	1.70	2.87	1.29	0.78	1.41	3.01	1.27	1.06	1.38
Sorting Total	6	2.28	1.30	0.46	1.81	2.21	1.38	0.92	1.79	2.61	1.44	1.22	1.75	2.45	1.20	1.95	1.69
Classification Total	24	9.80	3.99	2.26	4.28	10.55	4.22	3.32	4.76	11.75	4.40	4.47	5.11	12.22	4.47	6.05	5.13
Classification by Size	2	0.91	0.71	0.10	1.02	0.95	0.76	0.32	0.98	1.11	0.79	0.28	0.87	1.16	0.73	0.45	0.88
Classification by Form	6	1.72	1.27	0 69	1.52	2.03	1.28	0.88	1.56	2.51	1.36	1.00	1.68	2.50	1.41	1 69	1.71
Classification by Number	6	1.78	1.21	0.46	1 55	2 12	1.23	0.44	1.74	2.21	1.36	1.25	1.84	2.41	1.48	1.28	1.95
Classification by Function	9	4.99	1.92	1.02	2.13	5.05	2.08	1.62	2.42	5.47	1 83	1.85	2.24	5 69	1.87	2.28	1.95
Puzzles Total	5	1.69	1.40	0.72	1.78	2.09	1.32	0.59	1.46	2.04	1.26	1.04	1.67	2.36	1.43	1.01	1.46
Peabody Raw Score (Pretest only)	80	31.24	11.51			32.34	11.83			33.98	13.24			37.69	12.32		
Peabody Mental Age (Months)	--	40.01	12.45			41.07	13.94			43.58	15.10			47.16	15.05		
Hidden Triangles Total (Posttest)	10	4.30	1.60			4.49	1.69			4.79	1.49			4.85	1.46		
Which Comes First Total (Posttest)	12	4.51	2.18			4.93	2.55			5.92	2.87			6.89	2.79		

FIGURE 5a

Pretest and Gain on Total Test Score for All Disadvantaged, At-Home Children
(by viewing quartiles)
N=389

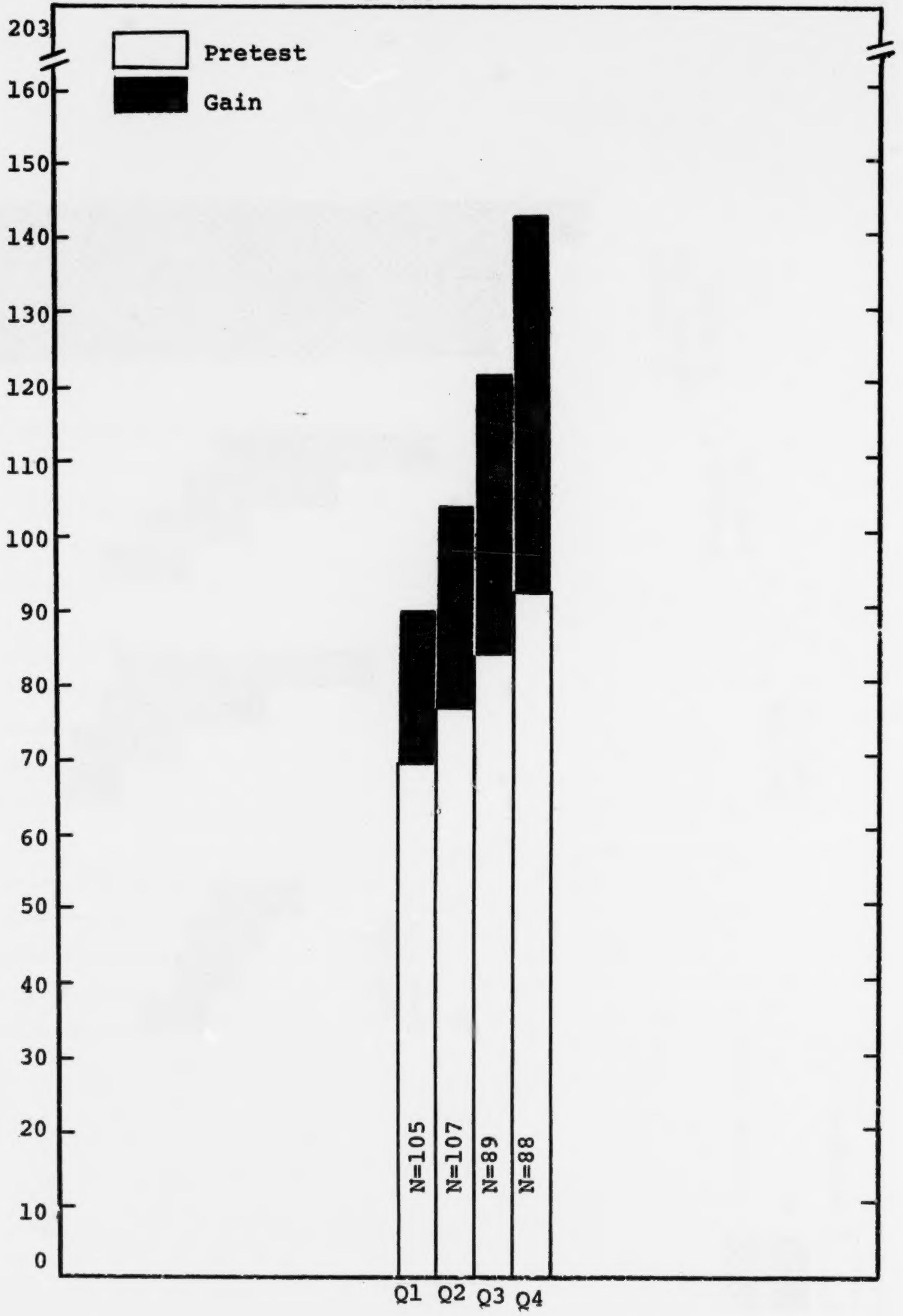


FIGURE 5b

Selected Pretest and Gain Scores for All Disadvantaged At-Home Children

(by viewing quartiles) Q1=105 Q2=107 Q3=89 Q4=88

Dashed lines beneath test titles indicate maximum possible scores.

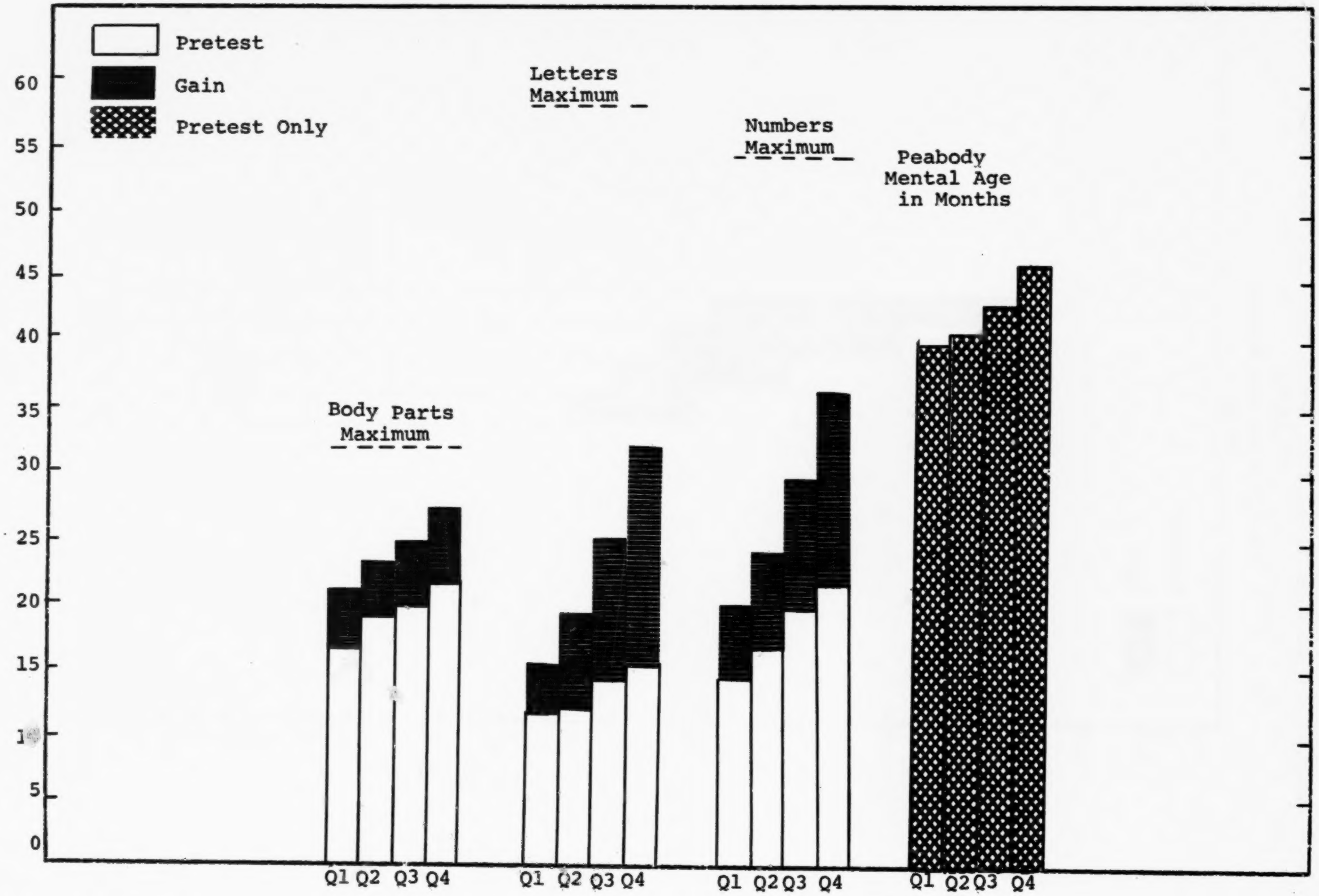


FIGURE 5c

Selected Pretest and Gain Scores for All Disadvantaged At-Home Children

(by viewing quartiles) Q1=105 Q2=107 Q3=89 Q4=88

Dashed lines beneath test titles indicate maximum possible scores.

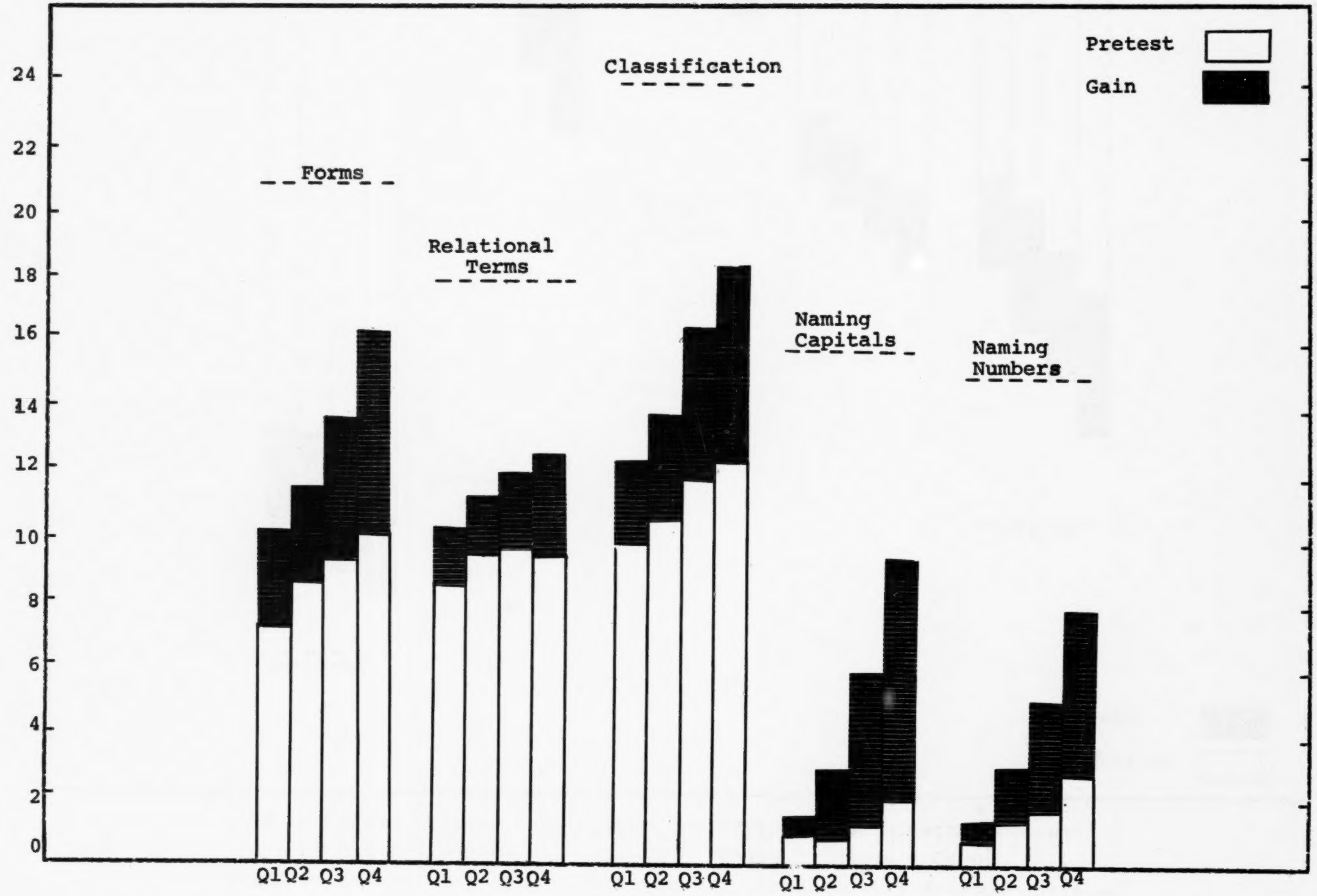


FIGURE 5d

Selected Pretest and Gain Scores for All Disadvantaged At-Home Children

(by viewing quartiles) Q1=105 Q2=107 Q3=89 Q4=88

Dashed lines beneath test titles indicate maximum possible scores.

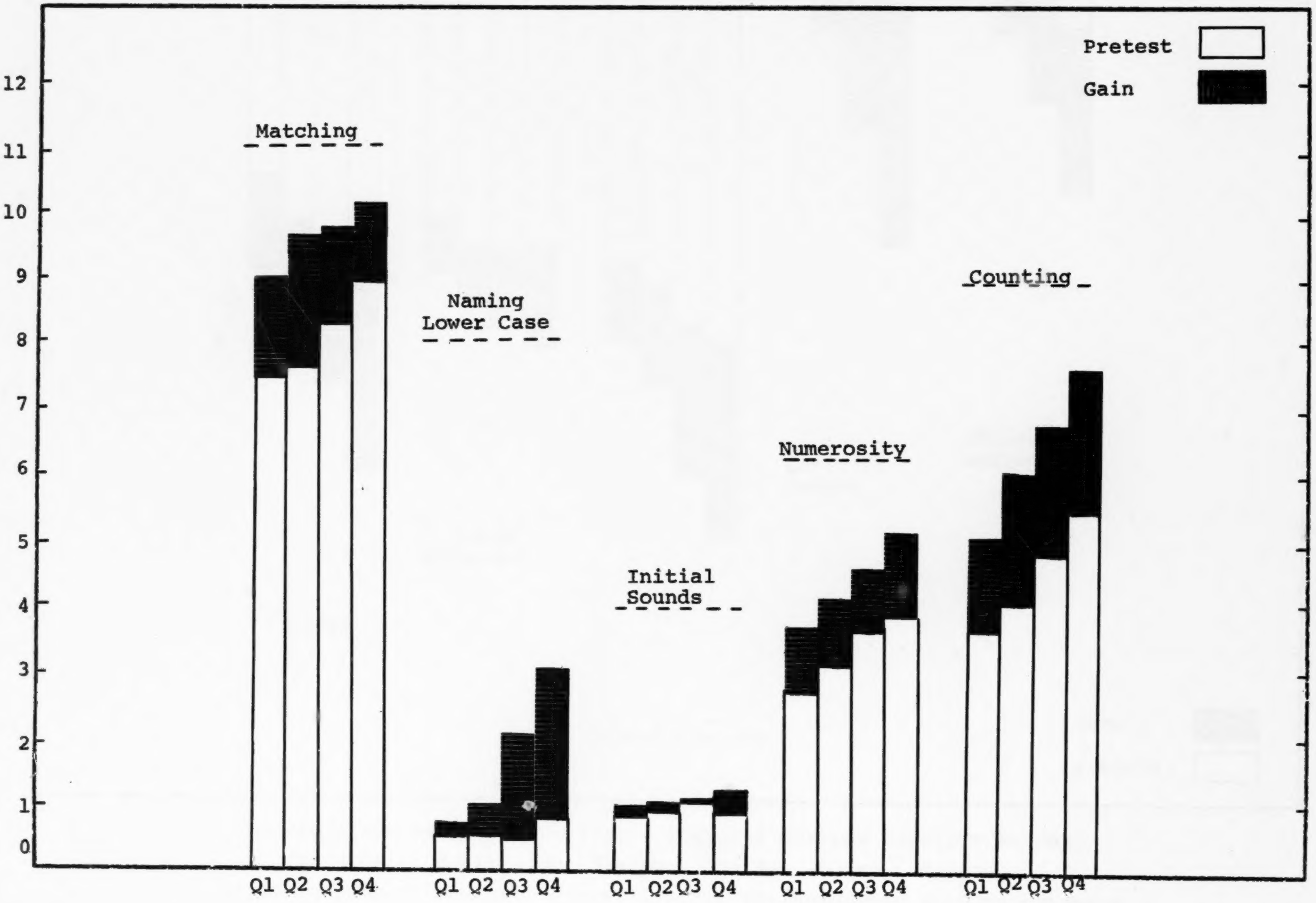


FIGURE 5e

Selected Pretest and Gain Scores for All Disadvantaged At-Home Children
(by viewing quartiles) Q1=105 Q2=107 Q3=89 Q4=88
Dashed lines beneath test titles indicate maximum possible scores.

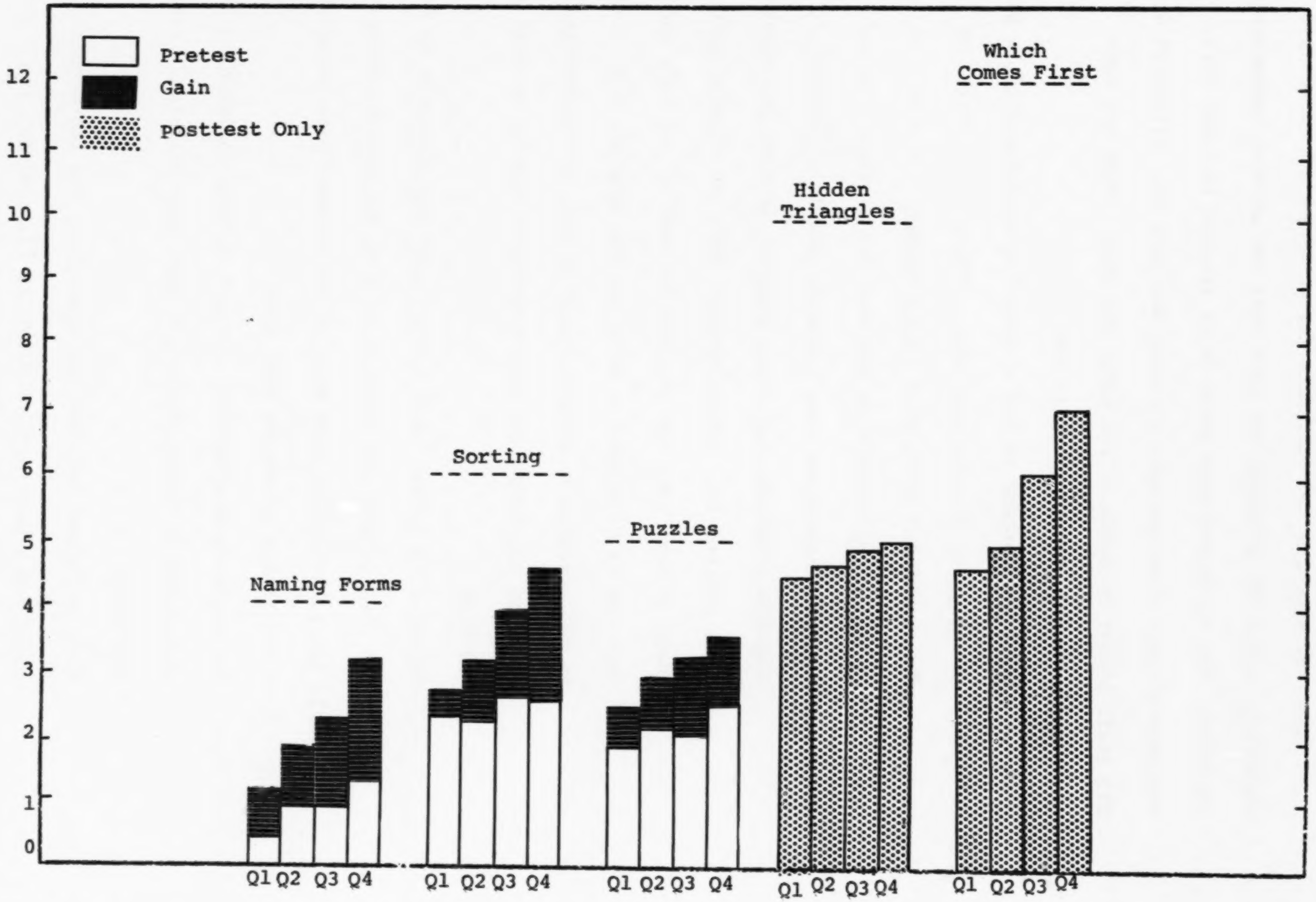


Table 18b presents the test data for at-home, not-encouraged children. Table 18c presents the test data for at-home encouraged children. The not-encouraged group is of greater interest here. It represents those disadvantaged children who were not influenced by ETS staff either to watch or not watch the show. Here are some observations based on data in Table 18b.

-- Almost 50 percent of the at-home not-encouraged group were in the first viewing quartile. Twenty-five percent of this group had never seen Sesame Street. In short, while Sesame Street reached an audience far greater than had been anticipated by even its most optimistic friends, a sizeable proportion of disadvantaged, at-home preschoolers never watched it. Unfortunately, this low viewing group seems to have been the one most in need of its influence.

-- Children in Q2 gained no more, on the average, than children in Q1. Presumably disadvantaged at-home not-encouraged children required more than occasional viewing to gain from the show.

-- Children in Q4 had lower mental ages than children in Q3, but they gained considerably more on the goal-specific tests.

Table 18c presents the test data on the at-home encouraged children. From this table it can be seen that:

-- The encouragement worked. Of all at-home children, a greater proportion of those encouraged fell into the higher viewing quartiles.

-- When collapsed over viewing quartiles, the not-encouraged group had a mean pretest score of 73, somewhat lower than the encouraged group's mean of 78. This is not apparent until the different proportions of the group in each viewing quartile are taken into account.

The parent questionnaire data for all disadvantaged at-home children are presented in Tables 19a and 20a, for the not-encouraged subgroup of the at-home children in Tables 19b and 20b and for the encouraged group in Tables 19c and 20c. Generally speaking, there are not large differences among the parent responses for the three groups and since the first group is a combination of the other two, this is not surprising. Nonetheless a few noteworthy findings appear.

-- For all disadvantaged at-home children (Table 19a) the SES indicator (amount of parent education) was inconsistently related to viewing quartile. Thus, results for SES did not parallel the results from other groups studied thus far nor were they consistent with the scores obtained for the at-home children on the other indices.

-- From Tables 20b and c it appears that the mother's talking about Sesame Street and watching the show with her child were significantly related to amount of viewing by both encouraged and not-encouraged children.

-- From Table 20b it appears that for the not-encouraged group, there was a significant relationship between having a color TV set and the amount of viewing ($p<.05$). Since this was the group which had had the least contact with ETS staff -- it was not observed and not encouraged -- the finding is intriguing. Forty-seven percent of those in Q4 had color

TVs, 24 percent in Q3, 14 percent in Q2, and 4 percent in Q1. The usefulness of color TV as a factor influencing greater viewing seems to be verified, though, of course, not proven. Experiments seem to be in order to study more vigorously not only amount of viewing but also amount of learning and the respective merits of color versus black and white television.

In summary, disadvantaged at-home children seem to have benefited substantially from viewing Sesame Street, especially if the amount of viewing was relatively large. Although the at-home children had low pretest scores, their gains were generally substantial and consistent across most goal areas. When at-home children in disadvantaged areas were left free to watch or not watch Sesame Street as the forces that control such things allowed, about a quarter of the children watched not at all, and another quarter watched only once or twice a week. The children who freely chose to watch a great deal (or whose mothers freely chose for them) gained quite heavily overall.

TABLE 18b

Pretest and Gain Scores for All Disadvantaged, At-Home, Not-Encouraged Children

(by quartiles)

N = 116

Test & Subtest	Maximum Possible Score	Q_1 N=53				Q_2 N=24				Q_3 N=18				Q_4 N=21			
		Pretest		Gain		Pretest		Gain		Pretest		Gain		Pretest		Gain	
		Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Grand Total	203	72.17	25.60	18.92	20.34	78.00	24.54	18.63	20.03	99.50	34.85	26.33	38.16	93.48	26.42	53.86	29.57
Body Parts Total	32	17.06	6.12	4.13	5.35	17.67	5.07	2.42	5.56	22.17	5.66	2.33	7.25	22.67	5.85	4.52	5.14
Pointing to Body Parts	5	2.83	1.45	0.79	1.26	3.17	1.24	0.46	1.18	3.56	0.98	0.33	1.65	3.67	1.15	0.81	1.36
Naming Body Parts	15	8.13	2.89	1.17	2.77	7.92	2.81	0.96	2.51	10.06	2.34	0.44	3.63	10.86	1.80	0.90	2.07
Function of Body Parts (Point)	8	4.32	2.46	1.15	2.80	4.71	1.73	0.58	2.59	5.67	2.20	1.39	1.75	5.43	2.48	2.00	2.26
Function of Body Parts (Verbal)	4	1.77	1.48	1.02	1.66	1.88	1.42	0.42	2.08	2.89	1.28	0.17	1.50	2.71	1.45	0.81	1.21
Letters Total	58	12.91	6.61	3.02	6.07	14.50	7.45	2.46	7.50	18.83	11.24	8.22	13.77	16.00	7.89	19.71	12.05
Recognizing Letters	8	2.13	1.58	0.43	2.27	1.88	1.39	0.92	2.12	2.94	2.31	1.61	3.57	2.19	1.94	3.62	2.33
Naming Capital Letters	16	1.30	2.82	0.30	2.52	1.25	3.26	0.79	3.59	3.06	5.21	3.39	6.41	2.52	4.52	8.62	6.70
Naming Lower Case Letters	8	0.68	1.59	-0.13	1.51	1.08	2.08	-0.38	2.34	0.78	2.16	2.00	2.79	0.67	1.20	3.24	3.28
Matching Letters in Words	4	2.55	1.29	0.98	1.28	3.00	1.06	0.38	0.97	3.33	0.91	0.50	1.10	3.10	1.37	0.90	1.37
Recognizing Letters in Words	4	1.34	0.98	0.47	1.34	1.38	0.97	0.21	1.75	1.78	1.40	0.06	1.47	1.43	1.21	1.48	1.81
Initial Sounds	4	0.66	0.85	0.25	1.31	0.92	0.93	0.0	0.93	1.11	0.76	-0.11	1.41	0.86	0.79	0.19	0.81
Reading Words	6	0.04	0.27	0.02	0.50	0.38	1.35	-0.21	1.25	0.17	0.51	0.22	0.88	0.0	0.0	0.38	0.59
Forms Total	20	7.57	2.90	2.40	4.16	9.21	3.40	1.96	4.38	11.11	3.43	3.06	4.41	10.14	4.13	5.90	4.30
Recognizing Forms	4	1.81	1.19	0.51	1.81	2.33	1.20	0.17	1.86	2.11	1.02	0.67	1.88	2.05	1.16	1.19	1.29
Naming Forms	4	0.45	0.70	0.62	1.20	0.92	1.14	0.63	1.47	1.33	1.28	1.06	1.76	1.10	1.34	2.24	1.51
Numbers Total	54	15.72	9.02	5.42	7.62	16.92	10.04	7.46	7.94	24.78	14.46	6.11	15.19	22.90	10.83	15.62	10.07
Recognizing Numbers	6	1.75	1.39	0.57	1.53	1.58	1.59	0.88	1.26	2.11	2.17	1.28	2.70	2.52	1.81	2.00	2.07
Naming Numbers	15	1.32	3.15	0.62	2.62	1.33	2.75	1.38	2.72	3.44	5.43	2.39	6.50	3.52	4.24	5.67	4.72
Numerosity	6	2.92	1.44	1.06	1.55	2.88	1.90	1.63	1.58	4.28	1.53	0.17	1.50	3.81	1.89	1.24	1.67
Counting	9	4.00	2.52	1.36	2.35	4.25	2.61	2.04	2.56	5.94	2.71	0.89	2.49	5.76	2.63	2.05	2.54
Addition and Subtraction	7	1.26	1.27	0.70	1.59	1.54	1.72	0.50	1.44	2.44	2.31	0.61	2.20	1.48	1.12	1.62	1.53
Matching Subtest	11	7.85	2.55	1.06	2.78	8.46	2.54	0.92	2.10	9.78	1.26	0.33	1.14	9.24	1.73	1.19	1.91
Relational Terms Total	17	8.66	3.04	1.70	2.92	9.33	3.16	1.38	3.65	10.50	2.53	2.06	2.31	9.76	2.84	2.48	3.57
Amount Relationships	9	4.26	1.67	1.00	1.91	4.46	2.28	1.08	2.95	5.22	1.40	0.72	1.53	4.33	1.68	1.19	2.23
Size Relationships	2	1.57	0.57	0.17	0.67	1.75	0.44	0.04	0.62	1.78	0.43	0.17	0.51	1.67	0.48	0.33	0.48
Position Relationships	5	2.55	1.62	0.32	1.74	2.71	1.20	0.25	1.33	2.89	1.37	1.00	1.46	3.19	1.33	0.76	1.64
Sorting Total	6	2.19	1.36	0.72	1.77	2.29	1.00	0.46	1.38	2.79	1.35	1.28	1.45	2.33	1.15	2.00	1.67
Classification Total	24	9.81	3.83	1.96	4.05	10.25	3.71	2.88	4.53	13.28	5.15	3.28	4.10	12.86	4.87	5.48	6.98
Classification by Size	2	1.02	0.75	-0.08	1.02	0.71	0.81	0.46	1.06	1.33	0.91	0.0	0.84	1.33	0.73	0.10	1.04
Classification by Form	6	1.68	1.19	0.60	1.55	1.88	1.15	0.75	1.48	3.11	1.41	0.61	1.42	2.86	1.35	1.10	1.81
Classification by Number	6	1.75	1.22	0.53	1.44	2.21	1.38	0.42	1.86	2.89	1.60	0.72	1.53	2.48	1.69	1.62	2.60
Classification by Function	9	4.94	1.89	0.94	2.13	5.04	1.76	1.21	2.19	5.44	1.92	1.83	2.09	5.67	2.06	2.38	2.36
Puzzles Total	5	1.81	1.48	0.51	1.55	2.21	1.35	0.08	1.53	2.11	1.49	1.39	1.88	1.95	1.69	1.29	1.68
Peabody Raw Score (Pretest only)	80	33.98	12.24			36.00	12.54			40.11	12.27			37.81	10.80		
Peabody Mental Age (Months)	--	42.92	13.54			45.46	16.98			50.11	14.20			46.52	12.63		
Hidden Triangles Total (Posttest)	10	4.23	1.49			4.29	1.37			5.22	1.51			4.81	1.10		
Which Comes First Total (Posttest)	12	4.74	2.24			4.58	2.48			6.44	2.93			6.19	2.94		

TABLE 18c

Pretest and Gain Scores for All Disadvantaged At-Home, Encouraged Children
(by quartiles)
N = 273

Test & Subtest	Maximum Possible Score	Q_1 N=52				Q_2 N=83				Q_3 N=71				Q_4 N=67			
		Pretest		Gain		Pretest		Gain		Pretest		Gain		Pretest		Gain	
		Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Grand Total	203	65.98	19.92	20.83	20.48	76.30	24.77	29.36	24.84	79.54	23.94	40.20	25.76	90.54	29.81	50.39	25.52
Body Parts Total	32	16.13	6.57	4.62	6.76	18.93	6.89	5.13	6.39	19.35	6.61	5.82	6.00	21.72	5.71	6.12	4.73
Pointing to Body Parts	5	2.96	1.36	0.48	1.54	3.35	1.41	0.58	1.34	3.44	1.34	0.62	1.30	3.82	1.17	0.81	1.06
Naming Body Parts	15	7.27	3.08	1.81	2.92	8.87	3.24	1.61	3.21	9.21	2.64	1.83	2.74	10.25	2.31	1.85	2.20
Function of Body Parts (Point)	8	4.27	2.30	1.46	2.74	4.53	2.55	1.99	2.49	4.73	2.18	1.94	2.29	5.03	2.32	2.39	2.12
Function of Body Parts (Verbal)	4	1.63	1.66	0.87	1.80	2.18	1.56	0.95	1.58	1.97	1.57	1.42	1.53	2.61	1.53	1.07	1.46
Letters Total	58	11.81	4.21	3.38	5.77	12.45	4.83	7.45	9.11	12.96	4.32	11.97	10.06	15.61	9.50	15.45	10.79
Recognizing Letters	8	2.23	1.66	0.31	2.37	2.33	1.72	1.00	2.26	2.18	1.39	2.30	2.45	2.69	1.95	2.33	2.69
Naming Capital Letters	16	0.60	0.91	0.75	1.73	0.86	2.06	2.34	5.05	0.70	1.34	4.87	4.59	1.82	3.87	7.06	5.32
Naming Lower Case Letters	8	0.27	0.49	0.31	0.98	0.35	0.86	0.80	2.09	0.37	0.96	1.66	2.22	0.66	1.75	2.28	2.43
Matching Letters in Words	4	2.65	1.23	0.83	1.34	2.61	1.31	1.11	1.28	2.97	1.32	0.75	1.18	3.07	1.08	0.75	1.16
Recognizing Letters in Words	4	1.38	1.22	0.12	1.55	1.34	1.12	0.46	1.61	1.24	1.06	0.86	1.50	1.30	1.21	1.27	1.59
Initial Sounds	4	0.81	0.69	0.10	1.07	0.77	0.70	0.25	1.30	0.92	0.77	0.15	1.09	0.81	0.72	0.42	0.96
Reading Words	6	0.00	0.00	0.02	0.14	0.02	0.15	0.04	0.33	0.00	0.00	0.13	0.53	0.15	0.78	0.33	0.82
Forms Total	20	6.77	2.85	3.87	3.53	8.51	3.69	3.28	4.02	8.92	3.56	4.65	4.23	10.22	3.41	5.94	3.77
Recognizing Forms	4	1.54	1.04	0.77	1.58	1.95	1.28	0.22	1.70	1.92	1.19	0.75	1.65	2.12	1.29	1.07	1.72
Naming Forms	4	0.27	0.45	0.98	1.06	0.89	1.16	0.83	1.43	0.82	1.02	1.51	1.34	1.30	1.34	1.91	1.35
Numbers Total	54	12.85	5.56	4.81	6.94	16.30	8.29	7.76	8.97	17.59	8.89	10.90	8.99	21.40	10.39	13.79	9.08
Recognizing Numbers	6	1.21	1.13	0.48	1.70	1.69	1.39	0.86	1.97	1.75	1.41	1.08	1.93	2.19	1.77	1.76	1.92
Naming Numbers	15	0.37	0.74	0.48	1.78	1.37	2.95	1.60	4.26	1.08	2.26	3.32	3.31	2.40	3.73	4.99	4.47
Numerosity	6	2.52	1.35	1.04	1.73	3.16	1.68	0.87	1.91	3.44	1.85	1.06	2.08	3.85	1.57	1.24	1.48
Counting	9	3.40	2.38	1.38	2.29	4.01	2.53	2.12	2.68	4.69	2.64	2.08	2.88	5.30	2.50	2.18	2.17
Addition and Subtraction	7	0.88	1.13	0.62	1.46	1.28	1.48	0.87	1.67	1.56	1.36	0.97	1.67	2.03	1.70	0.97	1.83
Matching Subtest	11	7.15	2.93	1.96	3.17	7.55	2.76	2.41	2.62	8.04	2.71	1.75	2.47	8.96	2.02	1.18	2.05
Relational Terms Total	17	8.35	2.99	1.75	3.20	9.52	3.23	1.75	3.61	9.48	2.72	2.23	3.20	9.48	2.80	3.16	3.15
Amount Relationships	9	4.08	1.71	0.81	2.20	4.29	2.08	1.10	2.43	4.55	1.87	1.14	2.34	4.51	1.75	1.55	2.28
Size Relationships	2	1.50	0.61	0.13	0.69	1.65	0.53	0.22	0.61	1.63	0.57	0.27	0.58	1.66	0.48	0.19	0.56
Position Relationships	5	2.42	1.49	0.65	1.60	3.10	1.39	0.31	1.80	2.86	1.28	0.72	1.41	2.96	1.26	1.15	1.29
Sorting Total	6	2.37	1.25	0.19	1.84	2.18	1.47	1.05	1.88	2.56	1.46	1.21	1.83	2.49	1.22	1.94	1.70
Classification Total	24	9.79	4.17	2.56	4.52	10.64	4.38	3.45	4.84	11.37	4.13	4.77	5.32	12.01	4.35	6.22	4.45
Classification by Size	2	0.81	0.66	0.29	1.00	1.02	0.73	0.28	0.95	1.06	0.75	0.35	0.86	1.10	0.72	0.57	0.80
Classification by Form	6	1.77	1.35	0.77	1.50	2.07	1.32	0.92	1.59	2.35	1.31	1.10	1.73	2.39	1.42	1.88	1.65
Classification by Number	6	1.81	1.21	0.38	1.67	2.10	1.19	0.45	1.72	2.04	1.25	1.38	1.90	2.39	1.42	1.18	1.71
Classification by Function	9	5.04	1.98	1.10	2.14	5.05	2.17	1.73	2.48	5.48	1.82	1.86	2.29	5.70	1.82	2.25	1.83
Puzzles Total	5	1.56	1.32	0.94	1.98	2.06	1.32	0.73	1.41	2.03	1.21	0.96	1.62	2.49	1.33	0.93	1.39
Peabody Raw Score (Pretest only)	80	28.44	9.93			31.28	11.39			32.42	13.02			37.66	12.76		
Peabody Mental Age (Months)	--	37.04	10.40			39.80	12.62			41.93	14.87			47.36	15.74		
Hidden Triangles Total (Posttest)	10	4.38	1.71			4.54	1.77			4.68	1.46			4.87	1.56		
Which Comes First Total (Posttest)	12	4.29	2.11			5.02	2.56			5.79	2.83			7.10	2.70		

FIGURE 5f

Pretest and Gain on Total Test Scores for All Disadvantaged At-Home Encouraged and Not-Encouraged Children

(by viewing quartiles)

Encouraged N=273 Not-Encouraged N=116

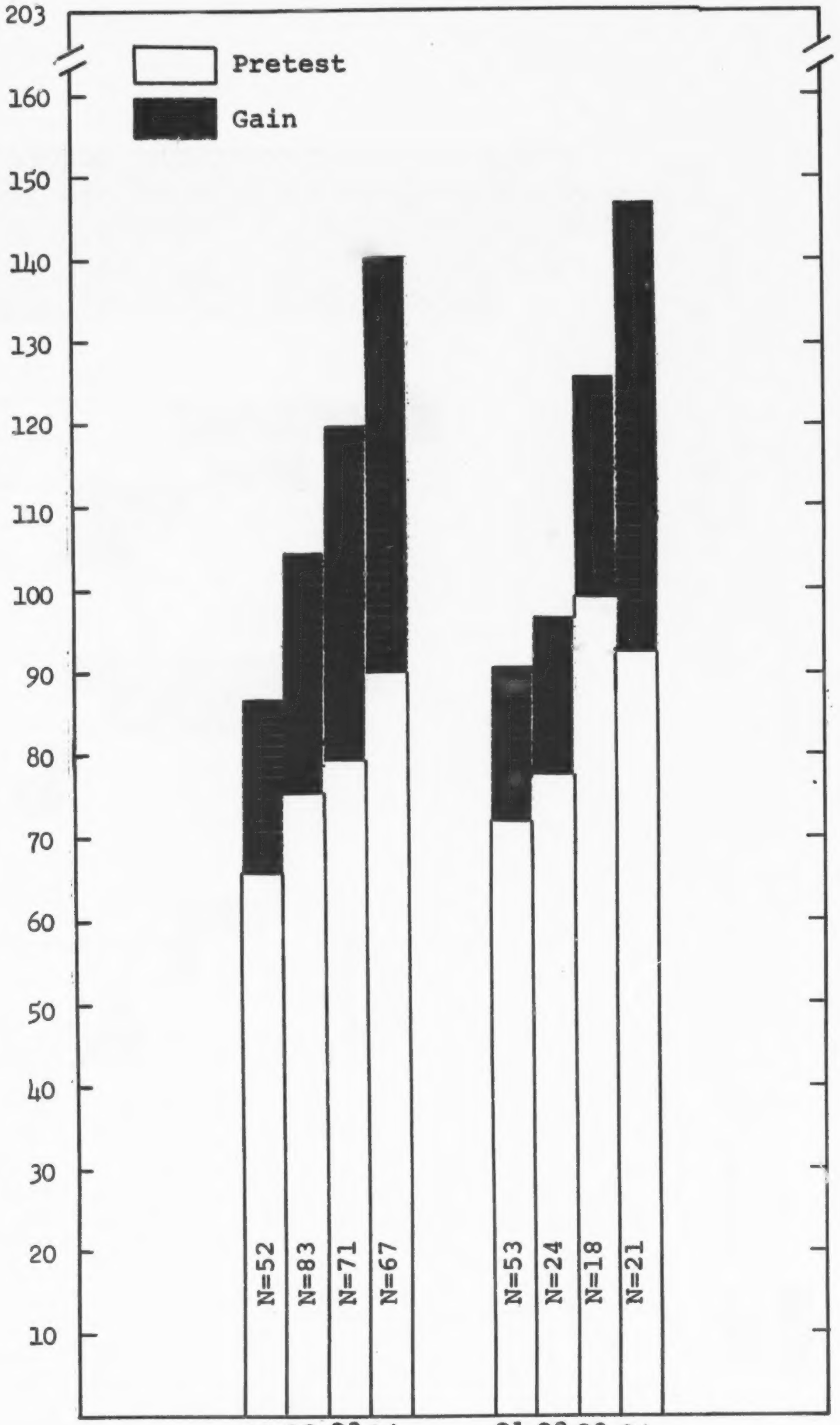


FIGURE 5g

Selected Pretest and Gain Scores for All Disadvantaged, At-Home, Not-Encouraged Children
(by viewing quartiles) Q1=53 Q2=24 Q3=18 Q4=21

Dashed lines beneath test titles indicate maximum possible scores.

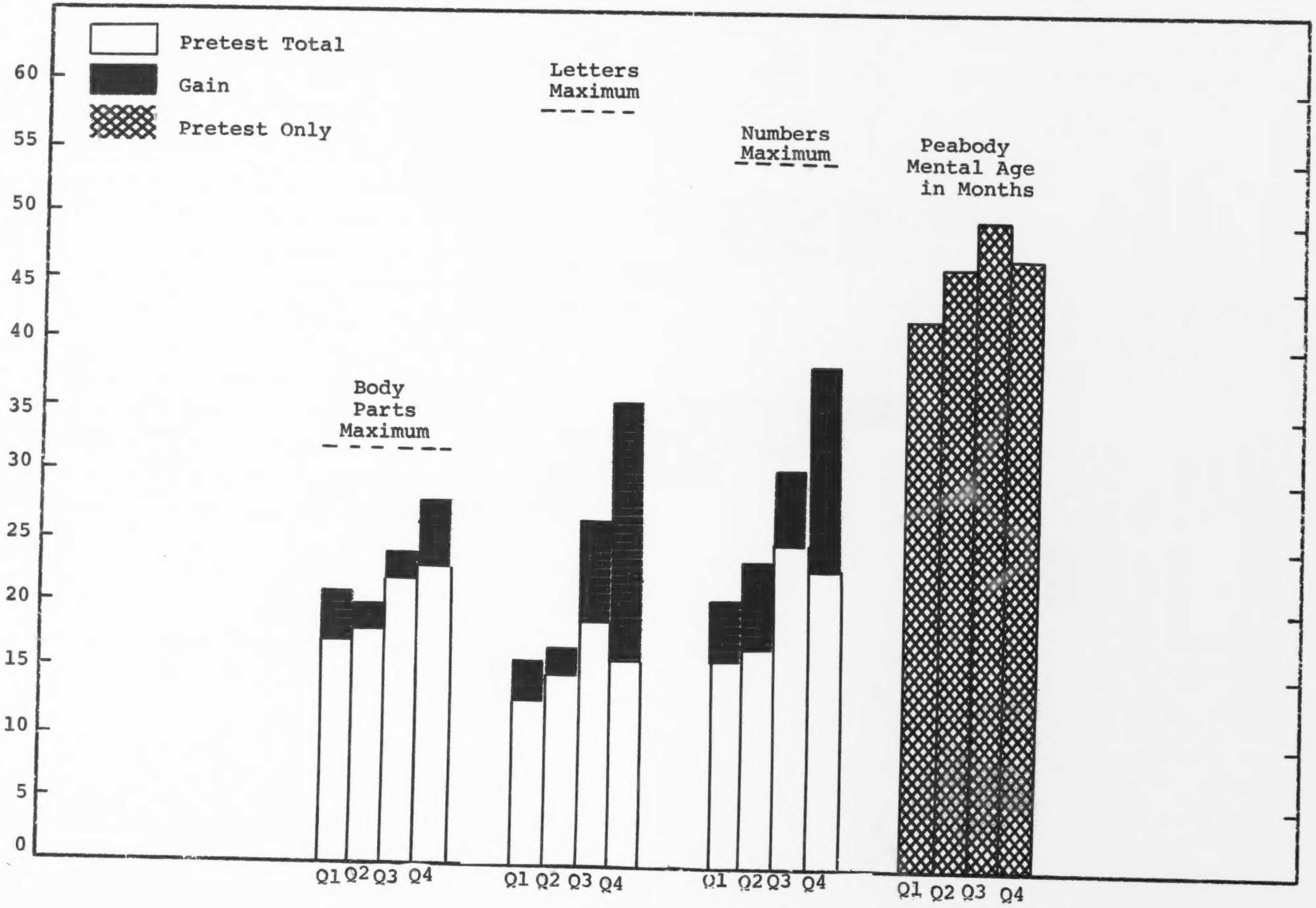


FIGURE 5h
Selected Pretest and Gain Scores for All Disadvantaged, At-Home, Not-Encouraged Children
(by viewing quartiles) Q1=53 Q2=24 Q3=18 Q4=21
Dashed lines beneath test titles indicate maximum possible scores.

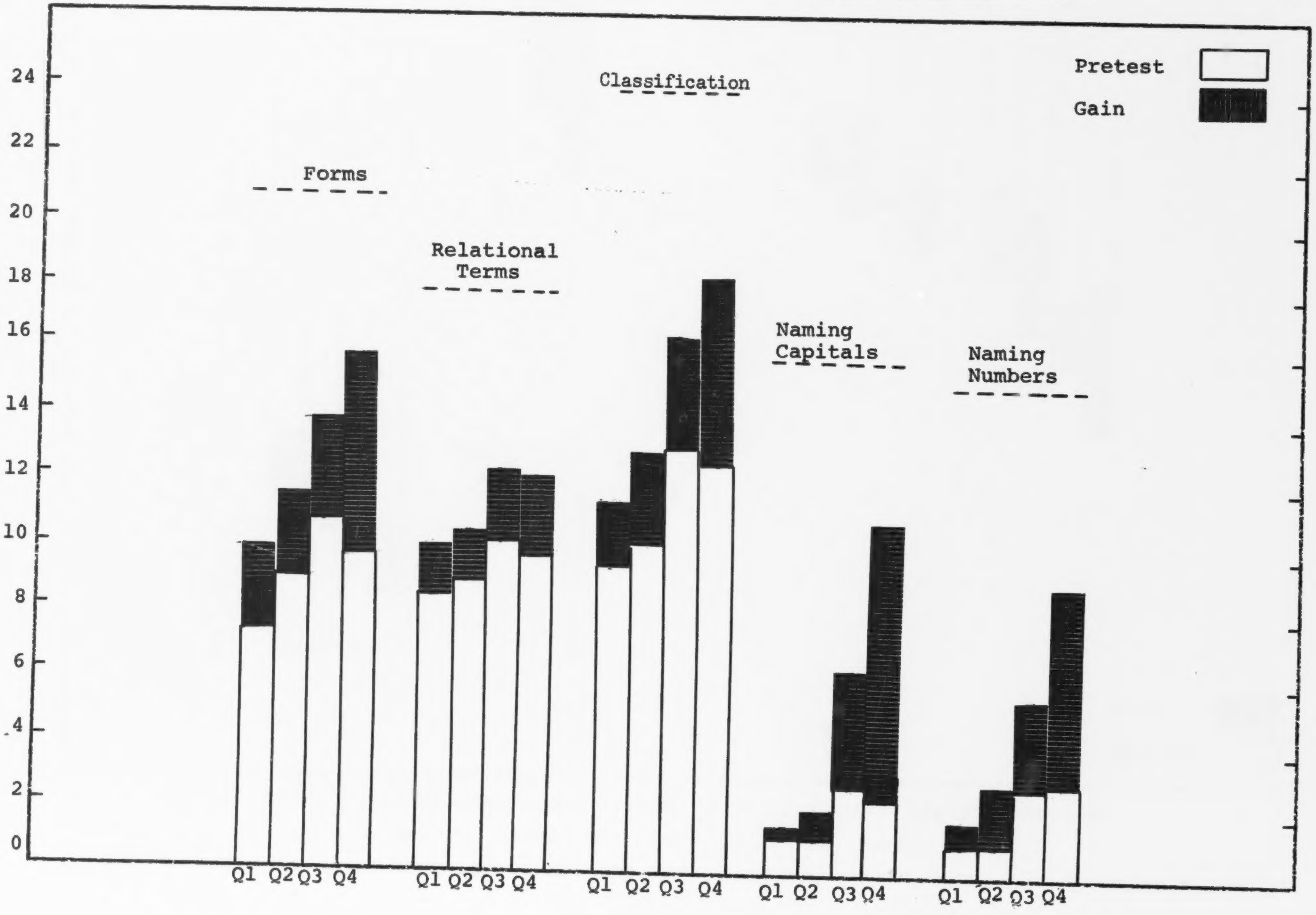


FIGURE 5i

Selected Pretest and Gain Scores for All Disadvantaged, At-Home, Not-Encouraged Children

(by viewing quartiles) Q1=53 Q2=24 Q3=18 Q4=21

Dashed lines beneath test titles indicate maximum possible scores.

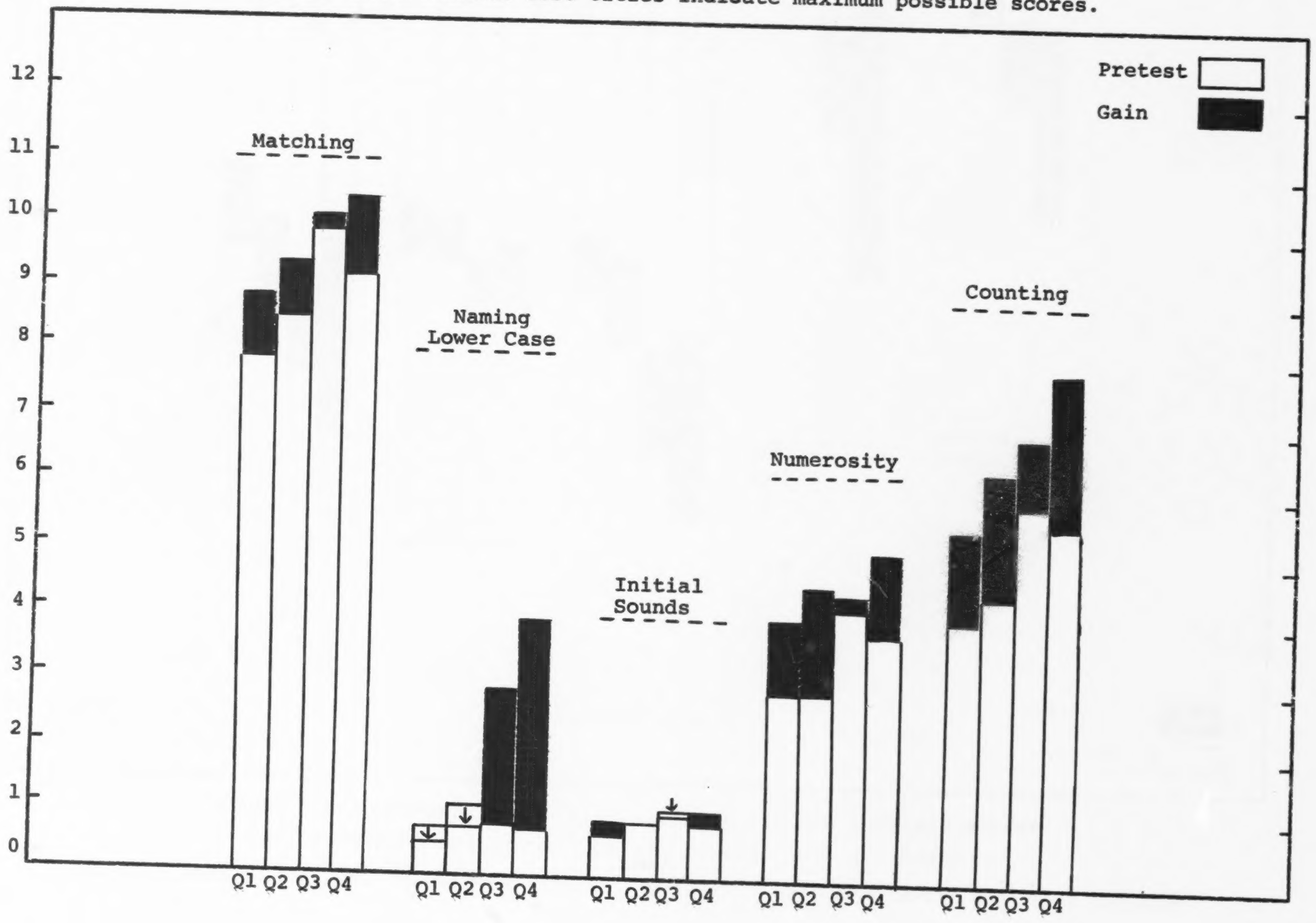


FIGURE 5j

Selected Pretest and Gain Scores for All Disadvantaged, At-Home, Not-Encouraged Children
(by viewing quartiles) Q1=53 Q2=24 Q3=18 Q4=21
Dashed lines beneath test titles indicate maximum possible scores.

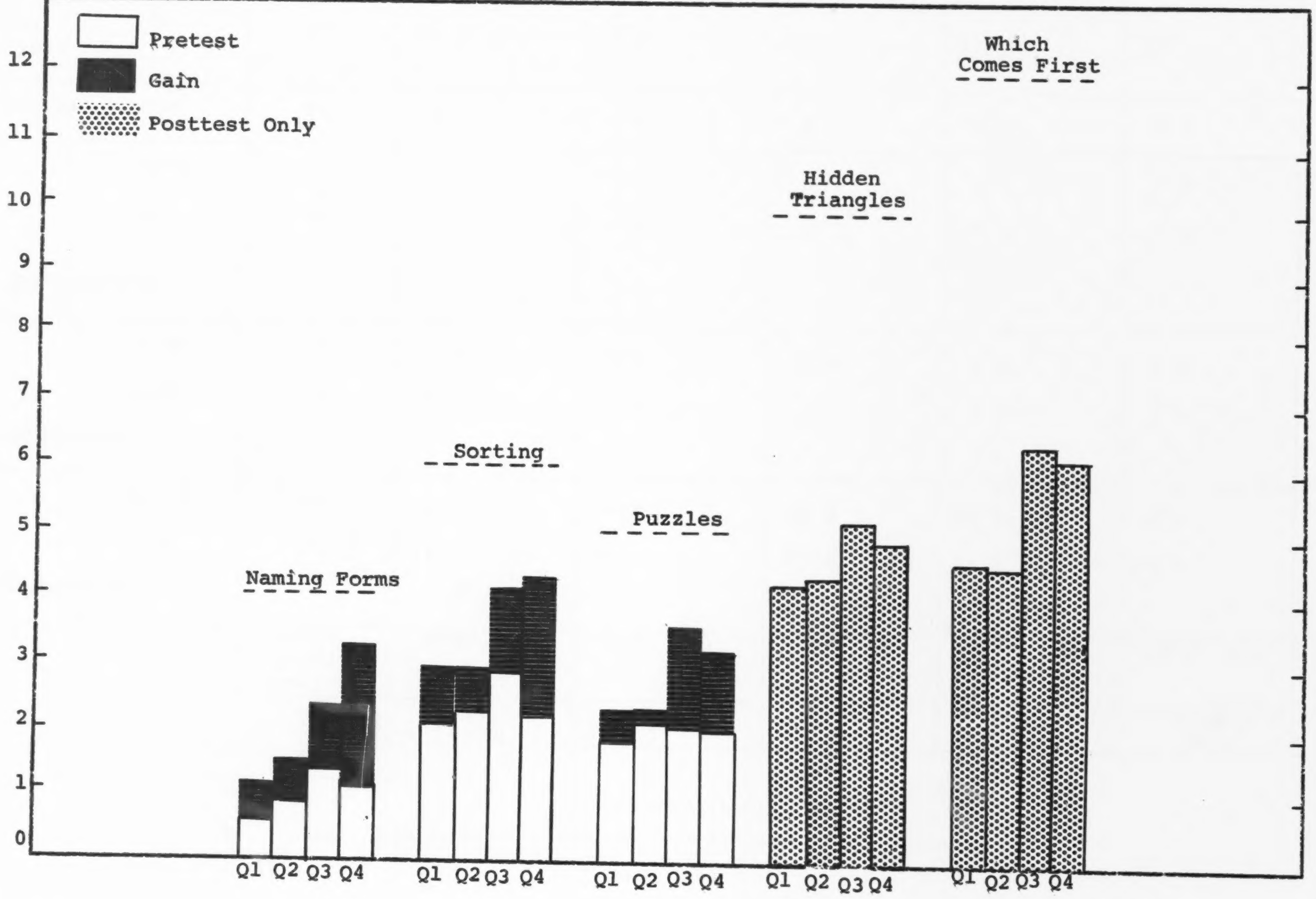


TABLE 19a

Parent Questionnaire Scales for All Disadvantaged, At-Home Children

(by quartiles)

	Maximum Possible Score	Total N=342		Q1 N=87		Q2 N=95		Q3 N=82		Q4 N=78		P *
		Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	
Parents'Expectation												
Pre	50	34.1		32.7		35.6		37.1		37.2		
Post	50	36.6		33.6		37.2		37.3		38.5		
Child Affluence												
Pre	6	3.3		2.7		3.3		3.5		3.6		
Post	6	3.6		3.3		3.6		3.7		3.9		
Child Educational Uses												
Pre	21	3.1		3.0		3.1		3.3		3.2		
Post	21	3.4		3.4		3.7		3.4		3.1		
Parents' Affluence	14	8.2		6.8		8.1		8.7		9.0		
Mean Years of Parents' Education	16	10.3		9.6		12.4		11.0		10.7		

*Probabilities not computed.

TABLE 20a

Selected Parent Questionnaire Items for All Disadvantaged At-Home Children

(by quartiles)

		P[1]	Pretest Questionnaire*				Posttest Questionnaire*			
			Q1 N=98	Q2 N= 100	Q3 N=82	Q4 N=80	Q1 N=91	Q2 N=101	Q3 N= 87	Q4 N=82
How often child uses art things at home.	Once a day		22%	34%	39%	39%	30%	31%	29%	33%
	Several a week		15	45	43	45	33	38	56	51
	Once a week or less		35	13	11	13	24	25	15	12
	Never		8	6	1	0	4	3	0	0
	Don't know		8	2	6	4	9	4	0	4
What mother usually does with child.	Plays with him		68	63	54	66	64	77	76	77
	Reads to him		59	46	54	49	53	63	64	80
	Housework		78	70	82	78	77	85	85	85
	Watches TV		18	15	13	13	20	17	30	30
	Watches TV with him		74	72	75	69	88	89	86	94
	Reads by herself		18	13	10	15	29	27	31	30
How often child is read to.	Once a day		14	17	20	24	10	13	12	29
	Several a week		24	22	34	33	27	31	45	37
	Once a week or less		39	40	25	26	40	49	36	28
	Never		9	11	5	1	10	2	1	1
	Don't know		12	10	16	17	13	6	6	4
Do most children have to be forced to learn?	Almost all the time		5	5	5	4	4	5	6	0
	Most of the time		12	10	16	12	8	8	9	5
	Sometimes		68	64	65	65	77	70	65	70
	Never		12	18	14	15	11	18	20	26
Does your child have to be forced to learn?	Almost all the time			**			3	4	5	1
	Most of the time						9	10	5	0
	Sometimes						63	54	59	46
	Never						25	33	31	52

[1] Probabilities not calculated.

*Responses do not always total 100% because of some incomplete questionnaires.

**Question not asked in this questionnaire.

TABLE 20a

Selected Parent Questionnaire Items for All Disadvantaged At-Home Children

(by quartiles)

		P	Pretest Questionnaire				Posttest Questionnaire			
			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Hours child watched TV yesterday.	6 or more		12%	5%	9%	17%	10%	14%	11%	13%
	4 or 5		12	21	25	18	21	18	18	30
	2 or 3		34	37	31	33	27	34	52	33
	Less than 2		35	36	29	33	36	34	18	22
Does child ever watch local ETV?	Yes		35	38	38	46	59	99	98	98
Mother watches Sesame Street with child.	Almost always						5	37	33	43
	Usually						8	17	18	16
	Sometimes			**			37	38	39	33
	Hardly ever						12	9	9	9
	No Sesame Street						36	0	0	0
Mother and child talk about Sesame Street.	Almost always						9	25	29	39
	Usually						10	21	18	35
	Sometimes			**			27	41	51	26
	Hardly ever						16	14	3	0
	No Sesame Street						36	0	0	0
Child plays games based on Sesame Street.	Almost always						1	7	9	23
	Usually						3	4	18	13
	Sometimes			**			18	40	43	44
	Hardly ever						27	26	18	13
	Don't know						13	24	12	5
	No Sesame Street						36	0	0	0
How helpful is Sesame Street for your child?	Not helpful						1	0	0	0
	Somewhat						18	23	18	7
	Very			**			30	72	80	91
	Don't know						14	6	1	1
	No Sesame Street						36	0	0	0

TABLE 20a

Selected Parent Questionnaire Items for All Disadvantaged At-Home Children

(by quartiles)

		P		Pretest Questionnaire				Posttest Questionnaire			
				Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Kind of TV on which child watches Sesame Street.	Black & white				**			56%	91%	85%	80%
	Color							5	9	14	20
	No Sesame Street							36	0	0	0
Employment of male head of household.	35 hours a week or more			58%	58%	78%	73%		**		
	10-35 hours			4	9	1	6				
	Less than 10 hours			0	1	1	0				
	Other			38	32	22	21				
Number of people living in child's home.	2			3	1	0	1		**		
	3-4			23	24	29	30				
	5-6			39	48	41	39				
	7-8			26	18	20	19				
	Over 8			5	6	9	10				
Number of rooms in house.	1-2			1	3	1	1		**		
	3-4			38	31	37	32				
	5-6			53	56	53	54				
	7-8			3	5	9	12				
	Over 8			2	1	0	1				

TABLE 19b

Parent Questionnaire Scales for All Disadvantaged, At-Home, Not-Encouraged Children

(by quartiles)

	Maximum Possible Score	Total N=99		Q1 N=47		Q2 N=22		Q3 N=15		Q4 N=15		P
		Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	
Parents'Expectation												
Pre	50	34.8	8.6	32.2	8.9	35.3	9.6	38.5	5.8	38.5	6.0	.017
Post	50	35.3	6.4	32.5	6.4	38.5	5.2	36.9	5.9	37.8	5.3	.000
Child Affluence												
Pre	6	3.1	1.6	2.7	1.7	3.4	1.5	3.3	1.3	3.5	1.5	.163
Post	6	3.5	1.5	3.2	1.5	3.7	1.4	3.3	1.0	4.1	1.7	.176
Child Educational Uses												
Pre	21	3.2		2.8		3.8		3.5		2.9		
Post	21	3.4		2.8		4.4		3.8		3.4		
Parents' Affluence	14	7.8	2.8	6.7	2.7	8.6	2.4	8.9	3.0	9.3	2.2	.001
Mean Years of Parents' Education	16	10.0	2.8	9.3	3.2	10.2	2.7	11.3	1.8	10.7	1.5	.081

TABLE 19c

Parent Questionnaire Scales for All Disadvantaged, At-Home, Encouraged Children
(by quartiles)

	Maximum Possible Score	Total N=243		Q1 N=40		Q2 N=73		Q3 N=67		Q4 N=63		P
		Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	
Parents'Expectation												
Pre	50	35.9	7.4	33.2	7.0	35.6	8.5	36.9	5.7	36.9	7.7	.053
Post	50	37.1	5.6	34.9	6.0	36.8	5.5	37.4	4.9	38.7	5.9	.009
Child Affluence												
Pre	6	3.3	1.6	2.7	1.6	3.2	1.7	3.6	1.4	3.6	1.5	.011
Post	6	3.7	1.2	3.3	1.2	3.6	1.2	3.8	1.3	3.9	1.2	.168
Child Educational Uses												
Pre	21	3.2		3.4		2.9		3.2		3.4		
Post	21	3.4		3.9		3.5		3.3		3.1		
Parents' Affluence	14	8.3	2.7	6.9	1.9	8.0	2.5	8.6	2.4	9.1	3.0	.000
Mean Years of Parents' Education	16	10.5	2.3	9.8	1.6	10.3	2.3	10.9	1.7	10.7	3.1	.094

TABLE 20b

Selected Parent Questionnaire Items for Disadvantaged At-Home, Not-Encouraged Children

(by quartiles)

		P		Pretest Questionnaire*				Posttest Questionnaire*			
		Pre	Post	Q1 N= 50	Q2 N=23	Q3 N=15	Q4 N= 15	Q1 N=49	Q2 N=22	Q3 N= 17	Q4 N=17
How often child uses art things at home.	Once a day	ns	ns	34%	43%	53%	53%	29%	32%	29%	41%
	Several a week			38	43	40	33	39	36	65	41
	Once a week or less			22	13	7	13	29	23	6	12
	Never			4	0	0	0	2	0	0	0
	Don't know			2	0	0	0	2	9	0	6
What mother usually does with child.	Plays with him	ns	ns	72	65	53	67	57	73	76	76
	Reads to him	ns	ns	66	52	47	53	63	63	65	71
	Housework	ns	ns	88	70	80	87	78	82	77	76
	Watches TV	ns	(.01)	16	9	0	20	14	14	24	59
	Watches TV with him	ns	ns	70	70	80	53	82	95	82	94
	Reads by herself	ns	ns	16	13	7	27	27	27	18	41
How often child is read to.	Once a day	ns	ns	18	22	7	27	10	23	6	24
	Several a week			36	22	40	27	31	23	35	29
	Once a week or less			30	35	40	33	33	45	59	35
	Never			6	13	7	7	12	0	0	0
	Don't know			10	9	7	7	4	9	0	12
Do most children have to be forced to learn?	Almost all the time	ns	ns	4	4	0	0	2	5	6	0
	Most of the time			14	9	20	33	10	5	6	12
	Sometimes			64	70	60	53	76	77	65	71
	Never			8	13	20	13	12	14	24	18
Does your child have to be forced to learn?	Almost all the time		ns		**			2	0	0	6
	Most of the time							6	14	0	0
	Sometimes							71	55	65	47
	Never							20	32	35	47

ns = not statistically significant.

Probabilities in parenthesis should be interpreted with caution since they were computed on small expected cell frequencies.

*Responses do not always total 100% because of some incomplete questionnaires.

**Question not asked in this questionnaire.

TABLE 20b

Selected Parent Questionnaire Items for Disadvantaged At-Home, Not-Encouraged Children

(by quartiles)

		P		Pretest Questionnaire				Posttest Questionnaire			
		Pre	Post	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Hours child watched TV yesterday.	6 or more	(.02)	ns	10%	4%	0%	7%	12%	9%	6%	6%
	4 or 5			10	13	47	33	20	32	29	47
	2 or 3			32	65	20	27	27	41	41	24
	Less than 2			40	17	27	33	37	18	24	18
Does child ever watch local ETV?	Yes	ns	(.001)	34	22	20	27	47	100	94	100
Mother watches Sesame Street with child.	Almost always		ns		**			0	23	41	24
	Usually							4	14	12	24
	Sometimes							37	45	35	35
	Hardly ever							6	18	12	18
	No Sesame Street							53	0	0	0
Mother and child talk about Sesame Street.	Almost always		(.01)		**			2	9	41	35
	Usually							6	23	6	29
	Sometimes							22	36	47	35
	Hardly ever							16	32	6	0
	No Sesame Street							53	0	0	0
Child plays games based on Sesame Street.	Almost always		(.05)		**			2	5	0	18
	Usually							2	5	12	6
	Sometimes							12	27	59	65
	Hardly ever							21	41	24	12
	Don't know							10	23	6	0
	No Sesame Street							53	0	0	0
How helpful is Sesame Street for your child?	Not helpful		ns		**			0	0	0	0
	Somewhat							16	18	18	0
	Very							22	77	76	94
	Don't know							8	5	6	6
	No Sesame Street							53	0	0	0

TABLE 20b

Selected Parent Questionnaire Items for Disadvantaged At-Home, Not-Encouraged Children

(by quartiles)

		P		Pretest Questionnaire				Posttest Questionnaire			
		Pre	Post	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Kind of TV on which child watches Sesame Street.	Black & white		(.05)	**				41%	82%	76%	53%
	Color							4	14	24	47
	No Sesame Street							53	0	0	0
Employment of male head of household.	35 hours a week or more	ns		60%	61%	67%	80%	**			
	10-35 hours			0	13	0	0				
	Less than 10 hours			0	0	0	0				
	Other			40	26	33	20				
Number of people living in child's home.	2	ns		4	0	0	0	**			
	3-4			24	13	33	27				
	5-6			38	52	27	27				
	7-8			22	29	27	33				
	Over 8			6	0	7	13				
Number of rooms in house.	1-2	ns		2	4	7	0	**			
	3-4			40	30	47	13				
	5-6			42	61	40	87				
	7-8			6	0	0	0				
	Over 8			4	0	0	0				

TABLE 20c

Selected Parent Questionnaire Items for All Disadvantaged, At-Home, Encouraged Children

(by quartiles)

		P		Pretest Questionnaire*				Posttest Questionnaire*			
		Pre	Post	Q1 N=48	Q2 N=77	Q3 N=68	Q4 N=65	Q1 N=42	Q2 N=79	Q3 N=70	Q4 N=65
How often child uses art things at home.	Once a day			23%	31%	35%	35%	31%	30%	29%	31%
	Several a week			38	46	44	48	26	38	54	54
	Once a week or less	ns	(.001)	25	13	12	12	19	25	17	12
	Never			6	8	1	0	7	4	0	0
	Don't know			8	3	7	5	17	3	0	3
What mother usually does with child.	Plays with him	ns	ns	65	62	54	66	71	77	76	77
	Reads to him	ns	.001	52	44	56	48	40	62	64	83
	Housework	ns	ns	71	70	82	75	76	85	87	88
	Watches TV	ns	ns	21	17	16	11	26	18	31	23
	Watches TV with him	ns	ns	79	73	74	72	95	86	87	94
	Reads by herself	ns	ns	21	13	10	12	31	27	34	28
How often child is read to.	Once a day			10	16	24	23	10	10	14	31
	Several a week			13	22	32	34	24	33	47	38
	Once a week or less	.001	(.001)	50	42	22	24	36	49	30	26
	Never			13	10	4	0	7	3	1	2
	Don't know			15	10	18	18	24	5	7	3
Do most children have to be forced to learn?	Almost all the time			6	5	6	5	7	5	6	0
	Most of the time	ns	ns	10	10	15	6	5	9	10	3
	Sometimes			73	62	66	68	79	67	66	69
	Never			10	19	13	15	10	19	19	28
Does your child have to be forced to learn?	Almost all the time							5	5	6	0
	Most of the time		(.05)		**			12	9	7	0
	Sometimes							52	53	57	46
	Never							31	33	30	54

ns = not statistically significant.
Probabilities in parenthesis should be interpreted with caution since they were computed on small expected cell frequencies.

*Responses do not always total 100% because of some incomplete questionnaires.

**Question not asked in this questionnaire.

TABLE 20c

Selected Parent Questionnaire Items for All Disadvantaged, At-Home, Encouraged Children

(by quartiles)

		P		Pretest Questionnaire				Posttest Questionnaire			
		Pre	Post	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Hours child watched TV yesterday.	6 or more	ns	.05	15%	5%	10%	18%	7%	15%	13%	15%
	4 or 5			15	23	21	14	21	14	16	26
	2 or 3			35	29	34	34	29	32	54	35
	Less than 2			29	42	29	32	36	38	17	23
Does child ever watch local ETV?	Yes	ns	(.001)	35	43	41	51	74	97	99	97
Mother watches Sesame Street with child.	Almost always		.05		**			12	41	31	48
	Usually							12	18	20	14
	Sometimes							38	35	40	32
	Hardly ever							19	6	9	6
	No Sesame Street							19	0	0	0
Mother and child talk about Sesame Street.	Almost always		(.001)		**			17	29	24	40
	Usually							14	20	21	37
	Sometimes							33	42	51	23
	Hardly ever							17	9	3	0
	No Sesame Street							19	0	0	0
Child plays games based on Sesame Street.	Almost always		.001		**			0	8	11	25
	Usually							5	4	19	15
	Sometimes							24	43	39	38
	Hardly ever							36	22	17	15
	Don't know							17	24	14	6
	No Sesame Street							19	0	0	0
How helpful is Sesame Street for your child?	Not helpful		(.001)		**			2	0	0	0
	Somewhat							19	24	17	9
	Very							38	70	83	91
	Don't know							21	6	0	0
	No Sesame Street							19	0	0	0

TABLE 20c

Selected Parent Questionnaire Items for All Disadvantaged, At-Home, Encouraged Children

(by quartiles)

		P		Pretest Questionnaire				Posttest Questionnaire			
		Pre	Post	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Kind of TV on which child watches Sesame Street.	Black & white		ns	**				74%	92%	87%	88%
	Color							7	8	13	12
	No Sesame Street							19	0	0	0
Employment of male head of household.	35 hours a week or more	ns		56%	57%	78%	71%	**			
	10-35 hours			8	8	1	8				
	Less than 10 hours			0	1	1	0				
	Other			35	34	19	22				
Number of people living in child's home.	2	ns		2	1	0	2	**			
	3-4			23	27	28	31				
	5-6			40	47	44	42				
	7-8			31	14	19	15				
	Over 8			4	8	9	9				
Number of rooms in house.	1-2	(.02)		29	29	25	11	**			
	3-4			48	17	31	34				
	5-6			10	23	15	26				
	7-8			13	27	29	28				
	Over 8			0	4	0	2				

6. Disadvantaged, At-School Children

Children in preschool classrooms were not the primary target group of Sesame Street. In many disadvantaged areas Head Start classrooms and Day Care Centers provide children with learnings that in scope go well beyond those that a one hour a day television show could hope to attain -- for example, learnings based on social interactions with peers, personal interchange with a supporting adult, and direct, concrete experience with manipulanda. Nonetheless there is still reason to assert the usefulness and potency of a television program beamed into the classroom as an aid for the teacher -- but not as a substitute. All the major executive and administrative officers of Head Start contacted at both the national and at the regional levels were interested in studying the effects of Sesame Street as an aid in the preschool classroom. If Sesame Street were effective in the home, might it not also be effective in a school setting?

There were 342 children in Head Start classrooms who were part of this evaluation. Incredibly, 171 were in encouraged classrooms, and 171 were in classrooms that did not receive television sets (the not-encouraged group). Table 21a presents the test data for all 342 children, Table 21b presents the test data for the subgroup which was not encouraged to watch, and Table 21c presents the test data on the subgroup which was encouraged and given TV sets to watch. Figures 6 a-e present the data for all at-school children graphically, and Figure 6f presents the graph for the total test scores of the encouraged and not-encouraged groups. Here are some of the more noteworthy findings.

-- Disadvantaged children at school tended as a group not to be the most avid watchers of Sesame Street. Even in encouraged classrooms where televisions sets were almost daily tuned to the show, 73 of the 171 children were in the bottom two viewing quartiles. Children in not-encouraged classrooms could usually see Sesame Street in the afternoons after school or, in Boston, on weekends. However, only 55 out of the 171 not-encouraged children were in the two top viewing quartiles. Overall then, 153 out of 342 at-school children were in the two top viewing quartiles although at least half of them could have watched the show in school almost daily.

-- As with at-home children, gains in most total test scores were positively associated with amount of viewing. Even when two contiguous quartiles had similar pretest scores, the posttest scores of the higher viewing quartile usually showed a larger gain.

-- Biggest differential gains occurred between the Q1 and Q2 viewing groups. (At-home children seemed to show biggest differential gains between the Q3 and Q4 viewing groups.) A little watching at school seemed to produce the largest differential gains, which is not to say even more watching did not produce even larger gains.

-- Among at-school children, the mental age for Q3 children was somewhat lower than the mental age for Q2 children. The Q2 and Q3 pretest scores were comparable. Nonetheless Q3 children outgained Q2 children on almost all goal-specific total tests.

Parent questionnaire scales and item level frequencies are presented for all at-school children in Tables 22a and 23a. The same data broken down into the encouraged and not-encouraged groupings are presented in Appendix J. The data from Table 22a seem to suggest that high viewing children have parents with high expectations for them. Their parents also seem to be somewhat more affluent but not better educated. The data from Table 23a do not indicate that the show had measurable side effects with respect to family expectations, attitudes, or behaviors. Appendix J simply substantiates this for the two subgroups.

In brief the result on the disadvantaged children generally seem to parallel those obtained for at-home children. There seems clear evidence that the children who viewed more learned more, and the one major distinction seems to be in the fact that small to moderate amounts of viewing appeared to be more effective for at-school than for at-home children.

TABLE 21a

Pretest and Gain Scores for All Disadvantaged At-School Children

(by quartiles)

N = 342

Test & Subtest	Maximum Possible Score	Q_1 N=96				Q_2 N=93				Q_3 N=82				Q_4 N=71			
		Pretest		Gain		Pretest		Gain		Pretest		Gain		Pretest		Gain	
		Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Grand Total	203	82.68	24.48	16.81	19.57	92.45	28.65	32.75	19.92	93.57	26.32	39.27	21.52	106.39	34.31	42.76	24.82
Body Parts Total	32	19.68	6.40	3.32	5.20	21.55	5.56	4.38	4.35	22.38	5.50	4.36	4.38	23.48	6.13	4.51	4.47
Pointing to Body Parts	5	3.25	1.36	0.77	1.33	3.73	1.27	0.65	1.13	3.95	0.97	0.46	1.03	4.06	1.05	0.54	0.89
Naming Body Parts	15	8.76	2.76	1.23	2.42	10.04	2.34	1.37	2.21	10.04	2.57	1.88	2.06	10.52	2.56	1.90	2.17
Function of Body Parts (Point)	8	5.27	2.33	0.86	2.44	5.34	2.05	1.44	1.98	5.82	2.01	1.22	2.13	5.99	2.16	1.35	1.84
Function of Body Parts (Verbal)	4	2.40	1.48	0.45	1.72	2.43	1.29	0.92	1.24	2.57	1.50	0.80	1.48	2.92	1.45	0.72	1.21
Letters Total	58	13.98	6.29	5.25	8.76	15.73	8.84	10.69	8.81	16.41	7.01	13.06	11.08	20.82	10.95	15.58	11.38
Recognizing Letters	8	2.39	1.77	0.89	2.34	2.42	2.11	1.86	2.40	2.83	1.98	2.09	2.43	3.62	2.25	2.48	2.61
Naming Capital Letters	16	1.53	2.53	2.24	4.24	2.00	3.95	4.84	4.53	1.99	3.30	6.05	5.26	3.96	5.02	7.15	5.69
Naming Lower Case Letters	8	0.48	0.87	0.66	1.89	0.73	1.57	1.62	2.25	0.52	0.98	2.23	2.55	1.39	2.11	2.70	2.71
Matching Letters in Words	4	3.06	1.09	0.36	1.01	3.31	1.17	0.55	1.13	3.33	0.92	0.54	0.95	3.44	0.92	0.51	0.89
Recognizing Letters in Words	4	1.32	1.13	0.29	1.37	1.37	1.05	0.81	1.14	1.41	1.04	0.96	1.51	1.61	1.18	1.04	1.40
Initial Sounds	4	0.61	0.70	0.11	0.94	0.80	0.76	0.17	1.10	0.89	0.86	0.21	1.23	1.03	0.89	0.21	1.43
Reading Words	6	0.01	0.10	0.01	0.10	0.01	0.10	0.13	0.37	0.02	0.16	0.22	0.59	0.13	0.48	0.42	0.75
Forms Total	20	9.75	3.59	1.42	3.36	11.22	4.06	3.55	4.08	10.88	3.44	4.16	3.73	11.38	3.28	4.94	3.08
Recognizing Forms	4	2.25	1.21	0.14	1.53	2.26	1.12	0.69	1.50	2.34	1.31	0.62	1.75	2.20	1.04	1.06	1.40
Naming Forms	4	1.40	1.23	0.48	1.41	1.83	1.31	1.06	1.50	1.70	1.22	1.10	1.38	1.63	1.17	1.59	1.29
Numbers Total	54	18.12	8.31	5.64	6.79	20.82	9.69	9.77	7.44	20.99	9.59	11.85	8.52	26.14	11.67	11.85	9.40
Recognizing Numbers	6	1.79	1.50	0.69	1.81	1.85	1.63	1.81	1.92	1.84	1.49	2.13	1.96	2.49	2.02	1.85	2.28
Naming Numbers	15	1.39	2.78	1.74	3.46	1.80	2.98	3.41	3.73	1.71	2.95	4.62	3.74	3.63	4.29	5.24	4.43
Numerosity	6	3.16	1.56	0.74	1.71	3.85	1.67	0.84	1.51	3.70	1.60	1.05	1.62	4.31	1.79	0.97	1.45
Counting	9	5.00	2.40	1.08	2.36	5.53	2.50	1.55	2.02	5.63	2.32	1.65	2.20	6.13	2.45	1.25	2.48
Addition and Subtraction	7	1.51	1.33	0.63	1.58	2.05	1.62	0.58	1.46	2.15	1.95	0.65	1.89	2.42	2.05	0.97	1.83
Matching Subtest	11	8.26	2.72	0.94	2.68	8.91	2.30	1.01	2.38	9.59	1.26	0.65	1.64	9.76	1.20	0.77	1.34
Relational Terms Total	17	9.73	2.85	0.41	3.15	10.28	2.83	1.47	3.09	10.50	2.80	1.43	2.87	11.01	3.36	1.73	3.24
Amount Relationships	9	4.59	1.76	0.30	1.98	4.72	1.86	0.83	2.18	4.66	1.98	0.91	2.21	5.03	2.19	0.94	2.08
Size Relationships	2	1.76	0.54	0.01	0.70	1.84	0.37	0.08	0.45	1.79	0.44	0.15	0.45	1.83	0.41	0.11	0.46
Position Relationships	5	2.94	1.34	0.03	1.66	3.17	1.33	0.52	1.56	3.50	1.18	0.28	1.34	3.62	1.31	0.44	1.56
Sorting Total	6	2.28	1.37	0.53	1.89	2.92	1.43	0.70	1.92	2.49	1.57	1.52	1.81	3.08	1.50	1.30	1.57
Classification Total	24	11.44	4.21	0.94	4.48	13.45	4.64	2.72	4.88	12.49	4.84	4.76	4.66	13.92	4.66	4.44	3.99
Classification by Size	2	1.26	0.74	-0.27	1.03	1.23	0.78	0.28	0.90	1.16	0.78	0.34	0.97	1.30	0.73	0.35	0.81
Classification by Form	6	2.27	1.19	0.31	1.50	2.92	1.60	0.87	1.96	2.60	1.46	1.44	1.87	2.94	1.49	1.30	1.38
Classification by Number	6	1.99	1.39	0.48	1.75	2.35	1.39	0.54	1.80	2.40	1.55	0.82	1.79	2.97	1.55	0.89	1.72
Classification by Function	9	5.40	1.95	0.43	2.36	6.29	1.69	1.11	2.04	5.83	1.94	1.96	1.91	6.21	1.94	1.68	1.95
Puzzles Total	5	2.08	1.36	0.13	1.87	2.01	1.41	0.98	1.82	2.20	1.34	0.71	1.43	2.54	1.48	0.89	1.74
Peabody Raw Score (Pretest only)	80	32.35	10.79			35.58	10.98			34.17	11.18			38.94	11.36		
Peabody Mental Age (Months)	--	40.63	10.78			44.10	12.52			42.78	12.91			48.17	14.54		
Hidden Triangles Total (Posttest)	10	4.16	1.35			4.66	1.52			4.82	1.38			4.77	1.48		
Which Comes First Total (Posttest)	12	4.53	2.31			5.38	2.45			6.02	2.61			6.85	2.74		

FIGURE 6a

Pretest and Gain on Total Test Score for All Disadvantaged, At-School Chilren (by viewing quartiles)

N=342

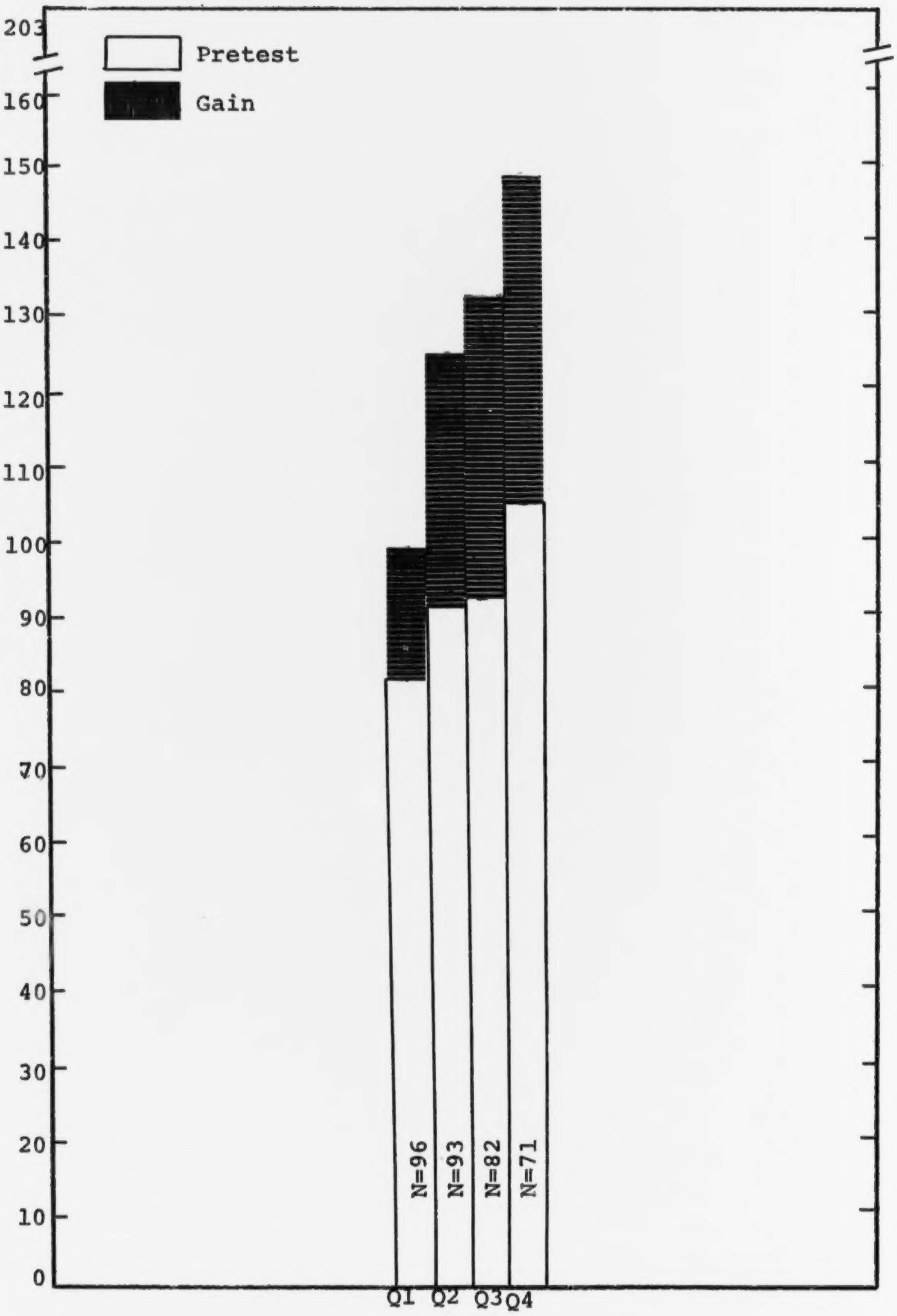


FIGURE 6b

Selected Pretest and Gain Scores for All Disadvantaged, At-School Children

(by viewing quartiles) Q1=96 Q2=93 Q3=82 Q4=71

Dashed lines beneath test titles indicate maximum possible scores.

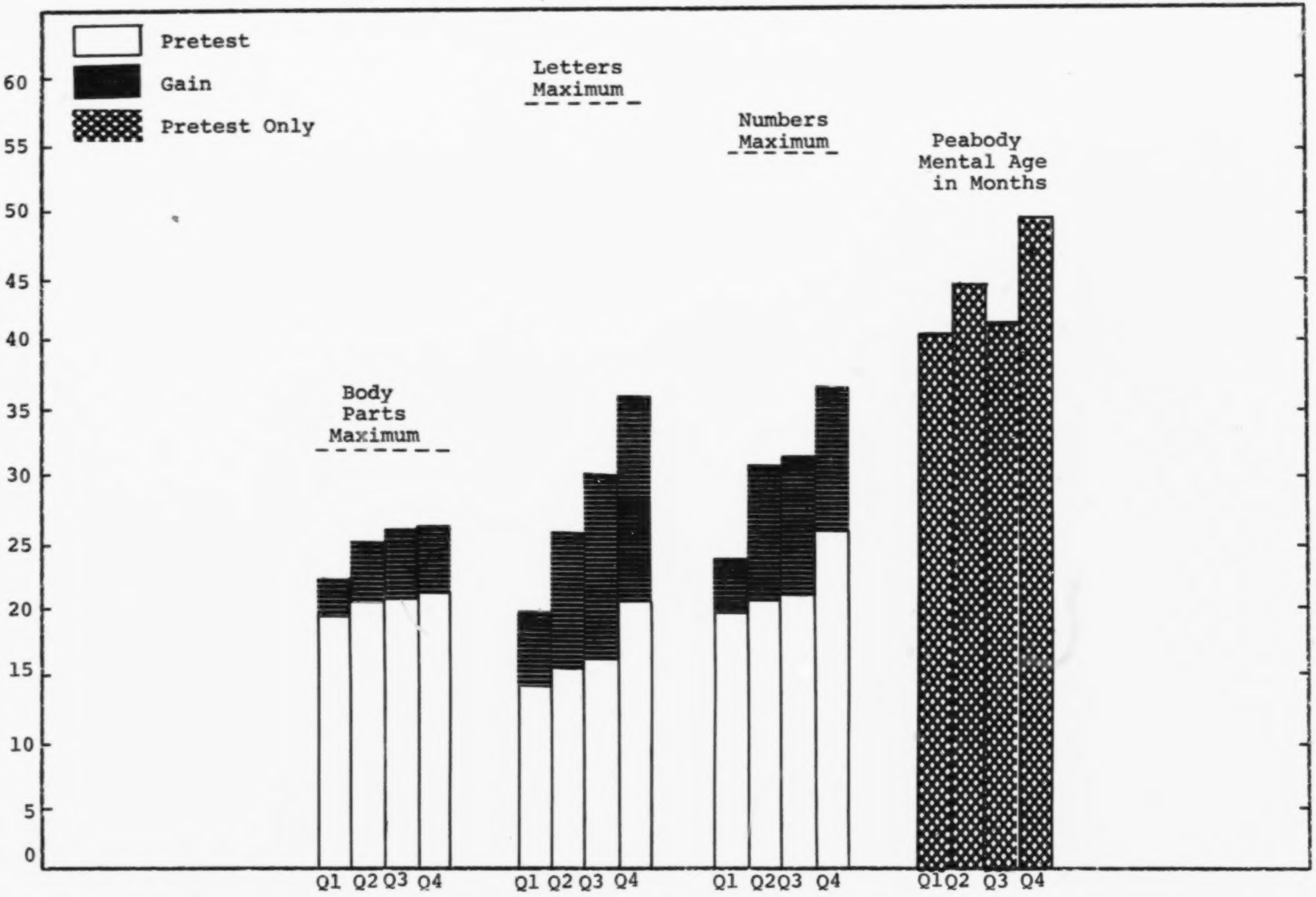


FIGURE 6c

Selected Pretest and Gain Scores for All Disadvantaged, At-School Children

(by viewing quartiles) Q1-96 Q2=93 Q3=82 Q4=71

Dashed lines beneath test titles indicate maximum possible scores.

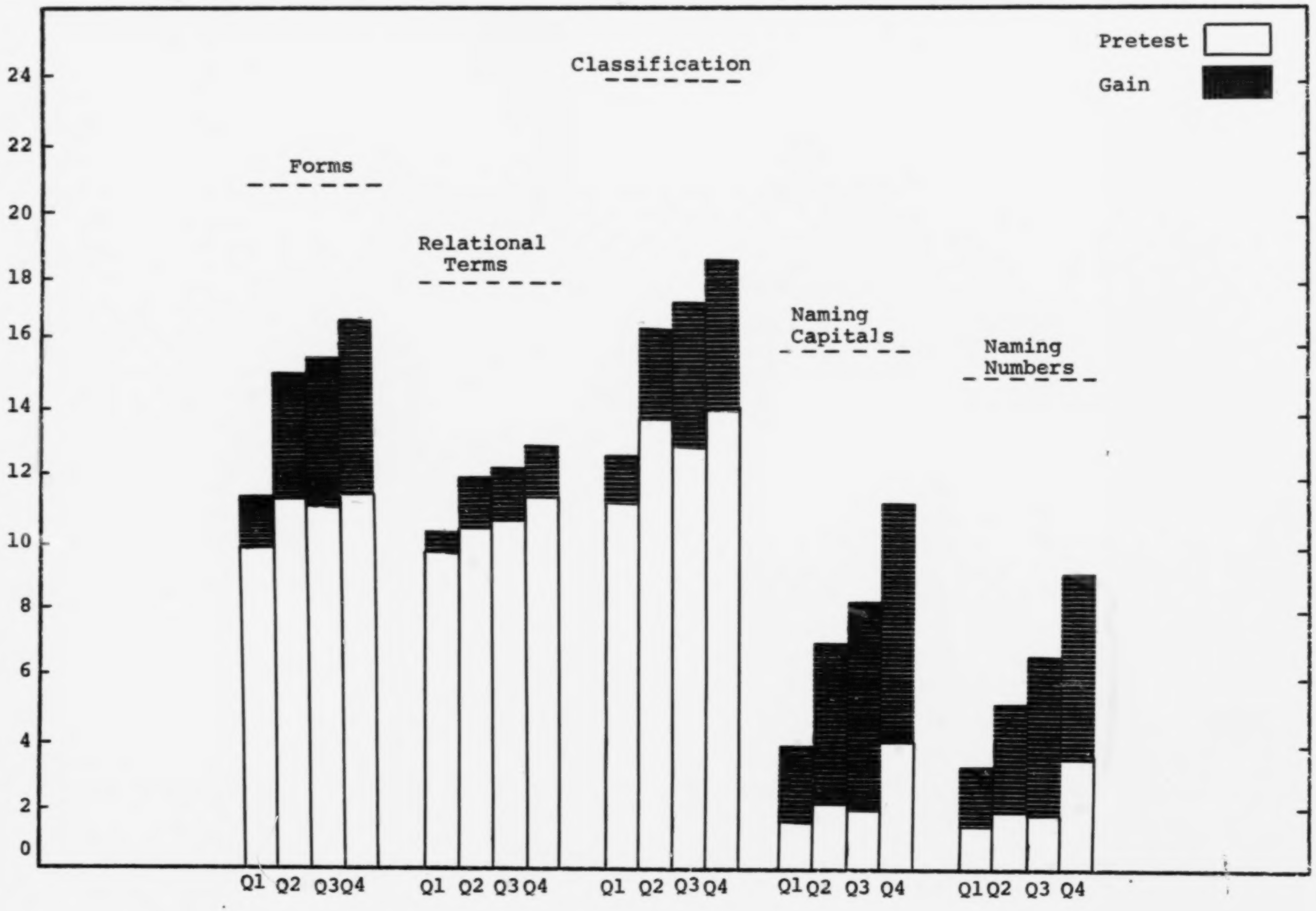


FIGURE 6d

Selected Pretest and Gain Scores for All Disadvantaged, At-School Children
(by viewing quartiles) Q1=96 Q2=93 Q3=82 Q4=71
Dashed lines beneath test titles indicate maximum possible scores.

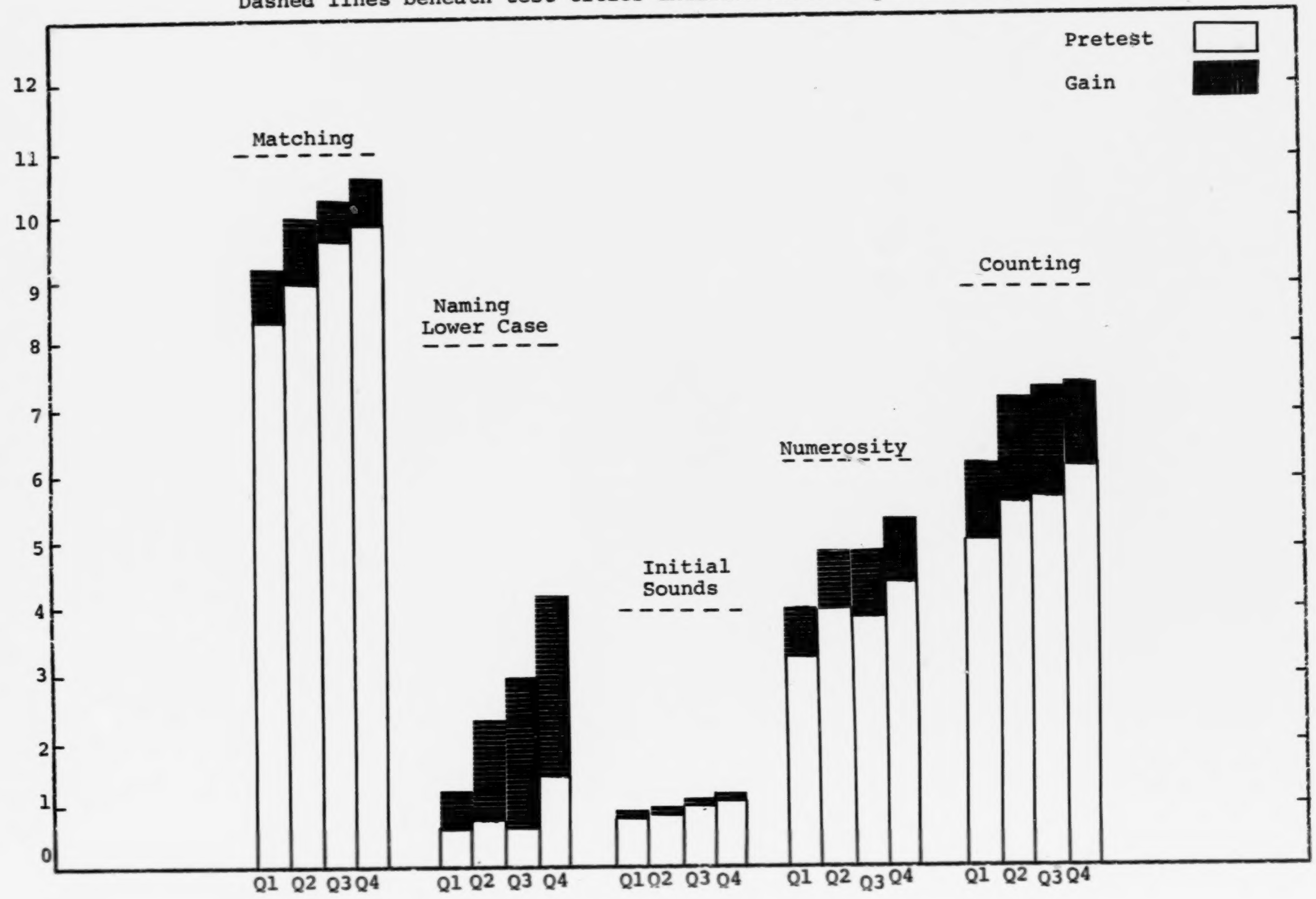


FIGURE 6e

Selected Pretest and Gain Scores for All Disadvantaged, At-School Children

(by viewing quartiles) Q1=96 Q2=93 Q3=82 Q4=71

Dashed lines beneath test titles indicate maximum possible scores.

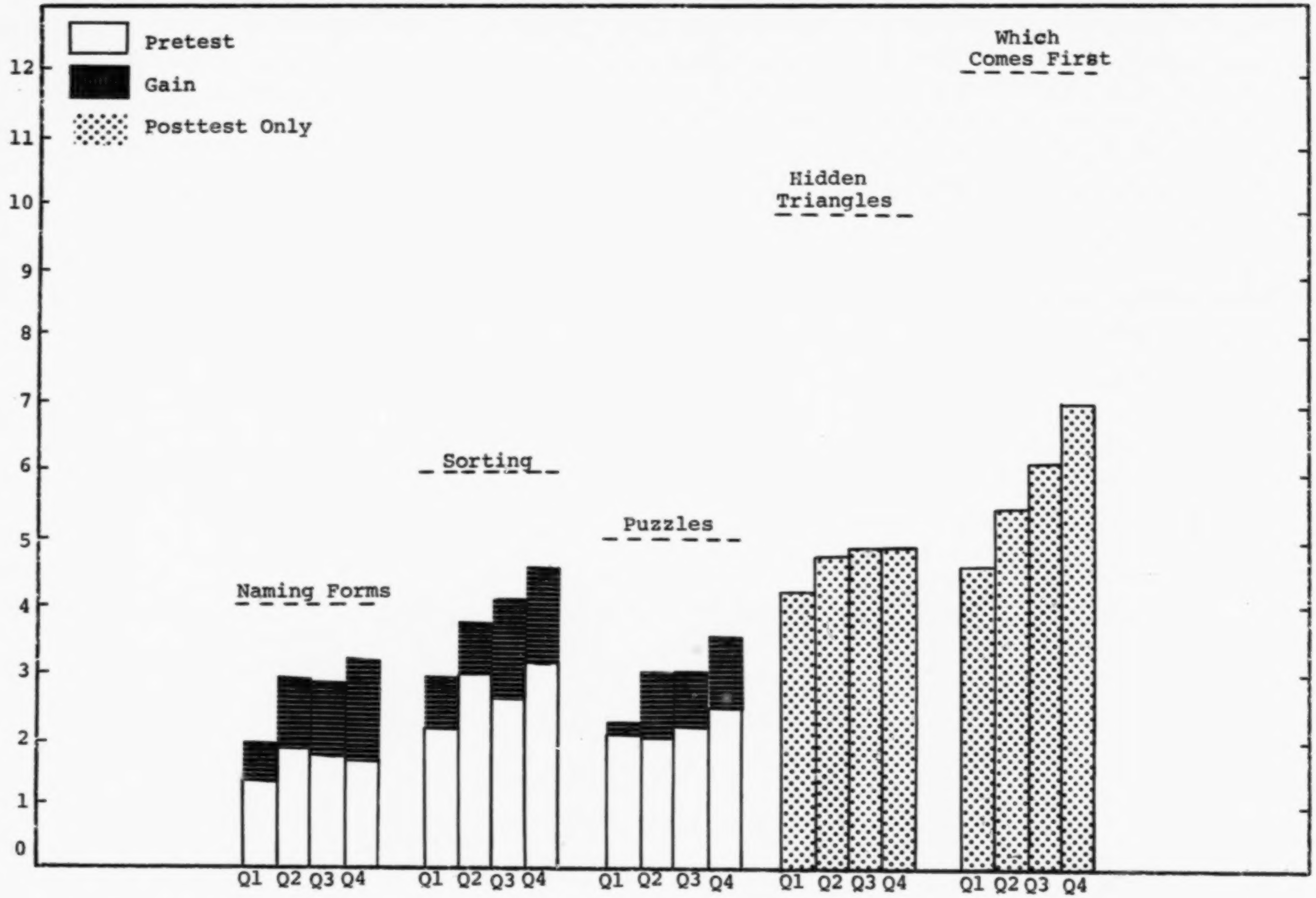


TABLE 22

Parent Questionnaire Scales for All Disadvantaged, At-School Children

(by quartiles)

		Total N= 246		Q1 N= 73		Q2 N= 60		Q3 N= 63		Q4 N= 50		P
	Maximum Possible Score	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	
Parents'Expectation												
Pre	50	37.0		33.9		37.3		37.8		40.0		
Post	50	38.1		37.4		37.2		38.5		39.5		
Child Affluence												
Pre	6	3.5		3.0		3.8		3.7		3.6		
Post	6	3.8		3.6		4.2		3.7		4.0		
Child Educational Uses												
Pre	21	4.2		3.7		4.6		4.0		4.8		
Post	21	4.6		4.2		4.8		4.5		4.8		
Parents' Affluence	14	8.2		7.2		8.2		8.9		9.0		
Mean Years of Parents' Education	16	10.9		10.0		11.2		11.4		11.3		

TABLE 23

Selected Parent Questionnaire Items for All Disadvantaged At-School Children

(by quartiles)

		P[1]	Pretest Questionnaire*				Posttest Questionnaire*			
			Q1 N=84	Q2 N=71	Q3 N=67	Q4 N=53	Q1 N=78	Q2 N=70	Q3 N=73	Q4 N=59
How often child uses art things at home.	**Once a day**		38%	39%	31%	43%	30%	40%	23%	36%
	Several a week		40	48	63	43	53	49	66	59
	Once a week or less		11	10	6	9	17	10	11	5
	Never		0	1	0	4	1	0	0	0
	Don't know		11	1	0	0	0	1	0	0
What mother usually does with child.	**Plays with him**		71	59	63	76	77	81	86	80
	Reads to him		54	57	61	62	56	69	79	75
	Housework		73	79	75	76	67	84	79	80
	Watches TV		19	11	10	21	28	19	18	17
	Watches TV with him		77	85	67	76	86	93	88	93
	Reads by herself		19	15	15	17	23	36	21	29
How often child is read to.	**Once a day**		17	23	25	17	17	24	14	19
	Several a week		39	34	46	45	37	38	47	41
	Once a week or less		19	30	25	34	35	30	39	37
	Never		8	4	1	1	8	3	0	0
	Don't know		17	10	1	2	4	6	2	3
Do most children have to be forced to learn?	**Almost all the time**		5	6	3	2	4	3	3	0
	Most of the time		14	17	7	6	12	6	7	8
	Sometimes		54	62	64	75	71	70	59	66
	Never		24	13	21	17	14	20	32	25
Does your child have to be forced to learn?	**Almost all the time**			**			4	0	0	0
	Most of the time						4	7	6	5
	Sometimes						60	50	51	54
	Never						31	43	44	41

[1] **Probabilities not calculated.**

*****Responses do not always total 100% because of some incomplete questionnaires.**

******Question not asked in this questionnaire.**

TABLE 23

Selected Parent Questionnaire Items for All Disadvantaged At-School Children

(by quartiles)

		P	Pretest Questionnaire Q1	Q2	Q3	Q4	Posttest Questionnaire Q1	Q2	Q3	Q4
Hours child watched TV yesterday.	5 or more		3%	3%	16%	4%	4%	1%	0%	1%
	4 or 5		15	15	16	9	18	13	5	12
	2 or 3		31	38	26	49	38	59	73	59
	Less than 2		44	44	52	38	42	27	22	25
Does child ever watch local ETV?	Yes		26	27	60	58	46	84	92	98
Mother watches Sesame Street with child.	Almost always		**				3	17	10	25
	Usually						6	7	7	14
	Sometimes						23	47	77	49
	Hardly ever						12	7	7	12
	No Sesame Street						56	0	0	0
Mother and child talk about Sesame Street.	Almost always		**				5	29	16	29
	Usually						5	20	22	29
	Sometimes						21	34	52	37
	Hardly ever						13	16	10	5
	No Sesame Street						56	0	0	0
Child plays games based on Sesame Street.	Almost always		**				1	9	7	14
	Usually						1	9	11	14
	Sometimes						21	40	55	49
	Hardly ever						5	17	14	8
	Don't know						15	24	13	15
	No Sesame Street						56	0	0	0
How helpful is Sesame Street for your child?	Not helpful		**				3	1	0	0
	Somewhat						12	17	11	5
	Very						24	69	85	93
	Don't know						5	13	5	1
	No Sesame Street						56	0	0	0

TABLE 23

Selected Parent Questionnaire Items for All Disadvantaged At-School Children

(by quartiles)

		P	Pretest Questionnaire				Posttest Questionnaire			
			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Kind of TV on which child watches Sesame Street.	Black & white			**			36%	84%	81%	66%
	Color						8	13	11	25
	No Sesame Street						56	0	0	0
Employment of male head of household.	35 hours a week or more		36%	45%	43%	51%		**		
	10-35 hours		5	1	1	0				
	Less than 10 hours		1	1	1	1				
	Other		58	52	43	47				
Number of people living in child's home.	2		7	4	9	8		**		
	3-4		28	44	34	43				
	5-6		25	23	39	34				
	7-8		25	14	13	11				
	Over 8		11	14	4	4				
Number of rooms in house.	1-2		3	3	5	4		**		
	3-4		44	37	32	36				
	5-6		44	45	52	51				
	7-8		2	13	7	6				
	Over 8		0	0	1	0				

TABLE 21b

Pretest and Gain Scores for All Disadvantaged, At-School, Not-Encouraged Children

(by quartiles)

N = 171

Test & Subtest	Maximum Possible Score	Q 1 N=83				Q 2 N=33				O 3 N=24				Q 4 N= 31			
		Pretest		Gain		Pretest		Gain		Pretest		Gain		Pretest		Gain	
		Mean	SD	Mean	SD	Mean	Sn	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Grand Total	203	83.54	23.86	16.65	16.15	89.70	24.56	30.97	18.28	96.13	25.11	39.88	20.42	116.23	37.40	39.55	28.81
Body Parts Total	32	20.20	6.21	3.13	5.09	21.39	5.36	3.45	4.19	21.88	5.57	3.71	4.62	24.87	6.30	2.97	3.32
Pointing to Body Parts	5	3.36	1.36	0.73	1.31	3.61	1.37	0.73	1.13	4.00	0.78	0.38	1.06	4.35	0.95	0.23	0.92
Naming Body Parts	15	8.90	2.69	1.19	2.50	9.79	2.64	0.91	2.65	9.88	2.85	1.33	1.97	11.16	2.92	1.32	1.99
Function of Body Parts (Point)	8	5.43	2.31	0.77	2.29	5.33	1.87	1.18	1.40	5.54	2.15	1.17	2.39	6.39	2.04	0.84	1.10
Function of Body Parts (Verbal)	4	2.51	1.39	0.43	1.65	2.67	1.11	0.64	1.19	2.46	1.53	0.83	1.69	2.97	1.45	0.58	0.99
Letters Total	58	13.82	6.24	5.16	7.37	15.82	8.66	8.94	7.16	16.79	4.59	14.54	12.94	25.68	12.59	15.26	12.64
Recognizing Letters	8	2.30	1.72	0.83	2.26	2.39	2.11	1.36	1.60	3.17	1.99	2.17	2.90	4.65	2.58	2.06	2.91
Naming Capital Letters	16	1.55	2.61	2.07	3.77	2.21	3.99	3.79	4.28	1.83	2.28	7.13	5.57	6.06	6.02	6.77	6.40
Naming Lower Case Letters	8	0.43	0.84	0.69	1.79	0.91	1.65	1.27	2.21	0.33	0.70	2.75	3.03	2.23	2.63	3.06	3.04
Matching Letters in Words	4	3.02	1.12	0.43	0.98	3.18	1.26	0.70	1.26	3.38	0.65	0.58	0.58	3.48	1.06	0.42	1.03
Recognizing Letters in Words	4	1.27	1.13	0.34	1.29	1.27	1.15	0.82	1.31	1.38	0.82	1.08	1.59	1.90	1.27	1.13	1.45
Initial Sounds	4	0.60	0.70	0.08	0.90	0.73	0.76	0.39	1.12	0.92	0.88	0.38	1.41	1.06	0.89	0.48	1.73
Reading Words	6	0.00	0.00	0.01	0.11	0.00	0.00	0.06	0.24	0.04	0.20	0.25	0.68	0.23	0.67	0.61	0.84
Forms Total	20	9.80	3.59	1.46	3.01	11.09	2.85	2.94	3.66	10.83	3.13	3.92	2.99	11.74	3.37	4.84	2.95
Recognizing Forms	4	2.25	1.19	0.13	1.47	2.27	0.94	0.48	1.35	2.50	1.06	0.63	1.21	2.35	1.14	1.10	1.35
Naming Forms	4	1.47	1.23	0.45	1.35	1.67	1.27	0.91	1.40	1.83	1.09	0.92	1.32	1.68	1.25	1.68	1.28
Numbers Total	54	18.37	7.91	5.67	6.30	18.73	8.52	11.15	5.89	23.42	10.33	12.21	9.26	28.81	12.84	11.13	11.76
Recognizing Numbers	6	1.78	1.46	0.70	1.65	1.82	1.65	1.67	1.87	2.38	1.53	2.13	1.99	3.10	2.30	1.52	2.55
Naming Numbers	15	1.42	2.85	1.60	3.32	1.52	2.72	3.39	3.18	2.71	3.33	4.67	3.47	4.94	4.86	5.61	5.55
Numerosity	6	3.20	1.56	0.81	1.66	3.58	1.60	1.24	1.46	4.00	1.69	1.08	1.74	4.42	1.86	0.94	1.69
Counting	9	5.18	2.31	0.93	2.22	5.27	2.21	1.85	1.99	6.04	2.29	1.54	2.06	6.48	2.57	1.00	2.56
Addition and Subtraction	7	1.52	1.19	0.75	1.54	1.76	1.30	0.97	1.38	2.46	2.08	0.96	2.20	2.61	2.14	0.77	2.03
Matching Subtest	11	8.25	2.79	1.12	2.54	9.03	2.34	0.97	2.71	9.88	1.12	0.46	1.59	10.00	1.03	0.55	1.18
Relational Terms Total	17	9.78	2.91	0.54	3.00	10.09	2.65	1.73	3.25	10.96	2.68	1.38	2.95	11.58	3.22	1.26	2.94
Amount Relationships	9	4.59	1.78	0.35	1.95	4.48	1.64	1.21	2.16	5.00	1.93	0.67	2.43	5.00	2.54	1.06	2.35
Size Relationships	2	1.77	0.55	0.01	0.72	1.91	0.29	0.00	0.35	1.88	0.34	0.04	0.36	1.90	0.30	0.03	0.41
Position Relationships	5	3.00	1.34	0.07	1.58	3.12	1.24	0.55	1.58	3.50	1.18	0.46	1.18	4.13	1.02	-0.03	1.47
Sorting Total	6	2.24	1.34	0.59	1.90	2.88	1.39	0.79	1.92	2.29	1.33	1.42	1.64	3.13	1.52	1.22	1.71
Classification Total	24	11.65	3.96	0.81	4.56	12.85	3.77	2.42	4.17	12.29	4.74	4.63	4.73	13.90	5.04	4.10	4.76
Classification by Size	2	1.31	0.73	-0.34	1.02	1.15	0.80	0.30	1.02	1.17	0.76	0.33	0.92	1.29	0.78	0.39	0.88
Classification by Form	6	2.34	1.16	0.27	1.53	2.79	1.19	0.85	1.54	2.46	1.41	1.42	1.91	2.94	1.59	1.35	1.62
Classification by Number	6	2.01	1.27	0.49	1.77	2.00	1.03	0.48	1.56	2.38	1.58	0.79	2.15	3.03	1.68	0.68	1.97
Classification by Function	9	5.47	1.93	0.39	2.40	6.21	1.49	0.94	1.58	5.75	1.92	1.88	1.65	6.10	1.87	1.61	1.98
Puzzles Total	5	2.05	1.38	0.12	1.88	1.88	1.27	0.88	2.07	1.92	1.21	0.58	1.53	2.35	1.52	1.10	1.56
Peabody Raw Score (Pretest only)	80	32.43	10.58			35.85	9.30			34.58	10.49			42.71	12.15		
Peabody Mental Age (Months)	--	40.63	10.70			43.73	10.63			42.67	10.61			53.52	16.57		
Hidden Triangles Total (Pretest)	10	4.20	1.33			4.67	1.57			4.88	0.97			4.68	1.35		
Which Comes First Total (Pretest)	12	4.53	2.39			5.30	1.66			6.21	2.74			7.10	2.59		

TABLE 21C

Pretest and Gain Scores for All Disadvantaged, At-School, Encouraged Children

(by quartiles)

N = 171

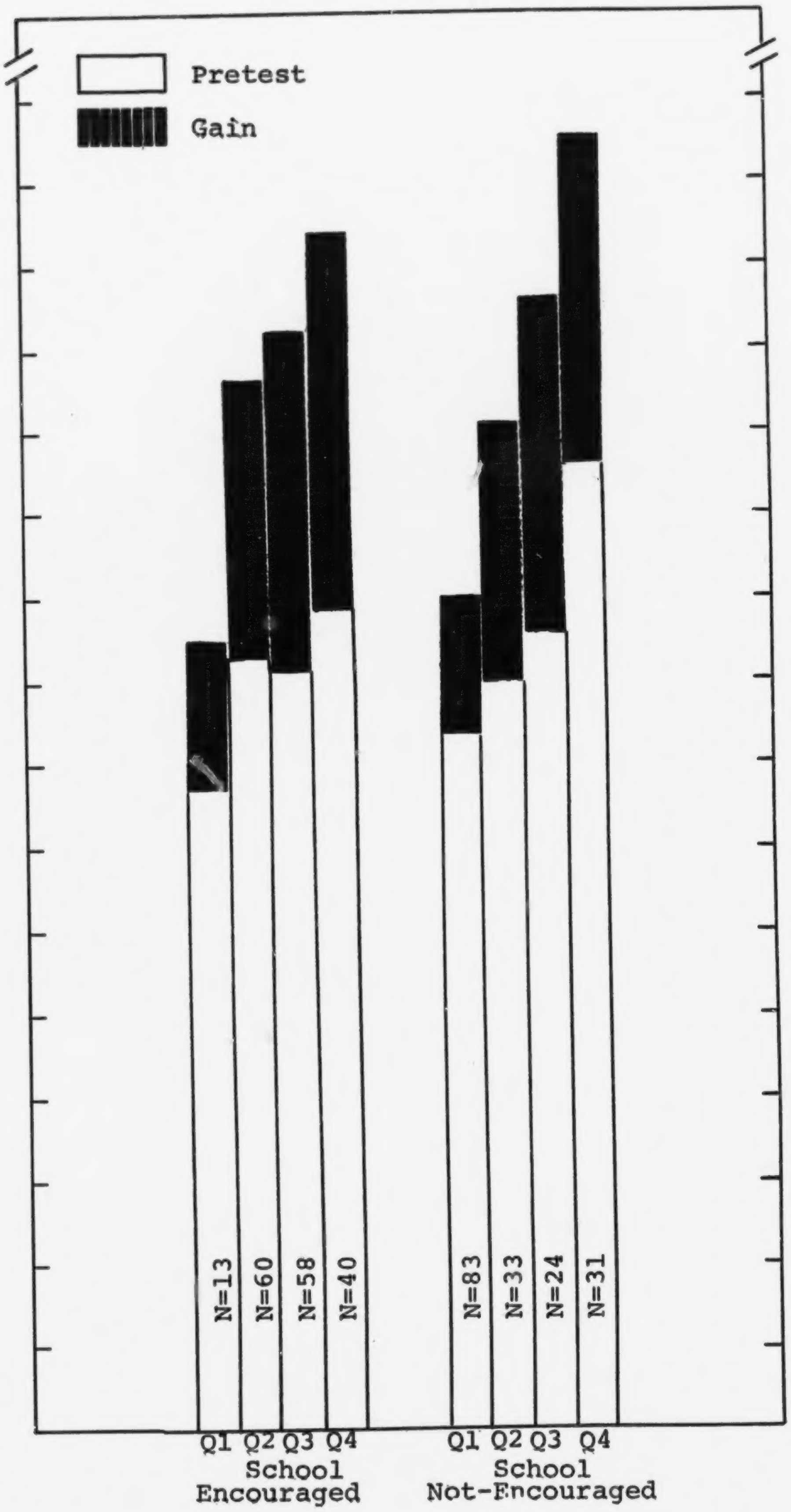
Test & Subtest	Maximum Possible Score	Q_1 N=13				Q_2 N=60				Q_3 N=58				Q_4 N=40			
		Pretest		Gain		Pretest		Gain		Pretest		Gain		Pretest		Gain	
		Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Grand Total	203	77.15	28.58	17.85	35.31	93.97	30.76	33.73	20.85	92.52	26.95	39.02	22.12	98.78	30.00	45.25	21.27
Body Parts Total	32	16.31	6.87	4.46	5.95	21.63	5.71	4.88	4.39	22.59	5.51	4.64	4.29	22.40	5.84	5.70	4.90
Pointing to Body Parts	5	2.54	1.20	1.00	1.53	3.80	1.22	0.60	1.14	3.93	1.04	0.50	1.03	3.83	1.08	0.78	0.80
Naming Body Parts	15	7.85	3.11	1.46	1.94	10.18	2.17	1.62	1.91	10.10	2.48	2.10	2.07	10.03	2.14	2.35	2.23
Function of Body Parts (Point)	8	4.23	2.31	1.46	3.31	5.35	2.15	1.58	2.23	5.93	1.96	1.24	2.04	5.68	2.22	1.75	2.19
Function of Body Parts (Verbal)	4	1.69	1.84	0.54	2.15	2.30	1.37	1.08	1.25	2.62	1.50	0.79	1.40	2.88	1.47	0.83	1.36
Letters Total	58	15.00	6.77	5.85	15.37	15.68	9.01	11.65	9.52	16.26	7.83	12.45	10.27	17.05	7.74	15.83	10.45
Recognizing Letters	8	2.92	2.02	1.23	2.92	2.43	2.13	2.13	2.72	2.69	1.98	2.05	2.24	2.83	1.58	2.80	2.34
Naming Capital Letters	16	1.38	2.10	3.31	6.59	1.88	3.95	5.42	4.59	2.05	3.65	5.60	5.12	2.33	3.34	7.45	5.14
Naming Lower Case Letters	8	0.77	1.01	0.46	2.47	0.63	1.53	1.82	2.27	0.60	1.08	2.02	2.33	0.75	1.32	2.43	2.43
Matching Letters in Words	4	3.31	0.95	-0.08	1.12	3.38	1.12	0.47	1.05	3.31	1.01	0.52	1.06	3.40	0.81	0.58	0.78
Recognizing Letters in Words	4	1.69	1.11	0.00	1.83	1.42	1.00	0.80	1.05	1.43	1.13	0.91	1.49	1.38	1.05	0.98	1.37
Initial Sounds	4	0.69	0.75	0.31	1.18	0.83	0.76	0.05	1.08	0.88	0.86	0.14	1.16	1.00	0.91	0.00	1.13
Reading Words	6	0.08	0.28	0.00	0.00	0.02	0.13	0.17	0.42	0.02	0.13	0.21	0.55	0.05	0.22	0.28	0.64
Forms Total	20	9.46	3.71	1.15	5.23	11.28	4.62	3.88	4.29	10.90	3.58	4.26	4.02	11.10	3.22	5.03	3.22
Recognizing Forms	4	2.23	1.36	0.15	1.91	2.25	1.22	0.80	1.57	2.28	1.40	0.62	1.95	2.08	0.94	1.03	1.46
Naming Forms	4	0.92	1.12	0.69	1.80	1.92	1.33	1.15	1.56	1.64	1.28	1.17	1.40	1.60	1.13	1.53	1.32
Numbers Total	54	16.54	10.74	5.38	9.71	21.97	10.16	9.02	8.11	19.98	9.17	11.71	8.28	24.08	10.37	12.40	7.16
Recognizing Numbers	6	1.85	1.82	0.62	2.72	1.87	1.63	1.88	1.96	1.62	1.44	2.14	1.97	2.03	1.66	2.10	2.05
Naming Numbers	15	1.15	2.38	2.62	4.33	1.95	3.12	3.42	4.02	1.29	2.70	4.60	3.88	2.63	3.52	4.95	3.37
Numerosity	6	2.85	1.57	0.31	1.97	4.00	1.71	0.62	1.50	3.57	1.56	1.03	1.59	4.23	1.76	1.00	1.26
Counting	9	3.85	2.73	2.08	3.04	5.67	2.66	1.38	2.04	5.47	2.33	1.69	2.27	5.85	2.35	1.45	2.44
Addition and Subtraction	7	1.46	2.07	-0.15	1.72	2.22	1.76	0.37	1.47	2.02	1.90	0.52	1.76	2.28	1.99	1.13	1.67
Matching Subtest	11	8.31	2.32	-0.23	3.32	8.85	2.30	1.03	2.19	9.47	1.30	0.72	1.66	9.58	1.30	0.95	1.45
Relational Terms Total	17	9.38	2.47	-0.46	4.05	10.38	2.95	1.33	3.02	10.31	2.85	1.45	2.86	10.58	3.44	2.10	3.44
Amount Relationships	9	4.62	1.66	0.00	2.24	4.85	1.96	0.62	2.17	4.52	2.00	1.02	2.12	5.05	1.91	0.85	1.87
Size Relationships	2	1.69	0.48	0.00	0.58	1.80	0.40	0.12	0.49	1.76	0.47	0.19	0.48	1.78	0.48	0.18	0.50
Position Relationships	5	2.54	1.27	-0.23	2.20	3.20	1.39	0.50	1.56	3.50	1.19	0.21	1.40	3.23	1.39	0.80	1.56
Sorting Total	6	2.54	1.56	0.15	1.86	2.95	1.47	0.65	1.93	2.57	1.66	1.57	1.88	3.05	1.50	1.35	1.48
Classification Total	24	10.08	5.51	1.77	3.94	13.78	5.06	2.88	5.25	12.57	4.92	4.81	4.67	13.93	4.40	4.70	3.31
Classification by Size	2	0.92	0.76	0.15	1.07	1.27	0.78	0.27	0.84	1.16	0.79	0.34	1.00	1.30	0.69	0.33	0.76
Classification by Form	6	1.85	1.34	0.62	1.26	3.00	1.79	0.88	2.17	2.66	1.48	1.45	1.87	2.95	1.43	1.25	1.17
Classification by Number	6	1.85	2.04	0.38	1.71	2.55	1.52	0.57	1.93	2.41	1.55	0.83	1.65	2.93	1.46	1.05	1.50
Classification by Function	9	4.92	2.14	0.69	2.18	6.33	2.08	1.20	2.26	5.86	1.97	2.00	2.03	6.30	2.02	1.73	1.95
Puzzles Total	5	2.31	1.25	0.15	1.91	2.08	1.49	1.03	1.69	2.31	1.38	0.76	1.39	2.68	1.46	0.73	1.87
Peabody Raw Score (Pretest only)	80	31.85	12.15			35.43	11.81			34.00	11.46			36.03	9.70		
Peabody Mental Age (Months)	--	40.62	11.31			44.30	13.46			42.83	13.76			44.03	11.00		
Hidden Triangles Total (Posttest)	10	3.85	1.46			4.65	1.51			4.79	1.53			4.85	1.59		
Which Comes First Total (Posttest)	12	4.54	1.76			5.42	2.81			5.95	2.57			6.65	2.87		

FIGURE 6f

Pretest and Gain on Total Test Scores for All Disadvantaged At-School Encouraged and Not-Encouraged Children

(by viewing quartiles)

Encouraged N=171
Not-Encouraged N=171



7. Advantaged Children

Whereas the prime target of Sesame Street was clearly the disadvantaged inner-city child, and likewise the major thrust of the ETS evaluation was towards the disadvantaged child, the question was naturally raised as to the effects of the show on more advantaged children. The 169 children in our advantaged group lived in a suburb northeast of Philadelphia. Parent Questionnaire data to be presented later substantiate subjective judgments that indeed this group of children lived in affluent homes and had parents who were college educated.

Table 24 presents pretest and gain scores for the advantaged children. Some of these scores are also presented graphically in Figures 7 a-e. Highlights of these data follow.

-- Although advantaged children who viewed retained their comparatively high attainments vis-a-vis disadvantaged children, the margin of difference was lowered. Disadvantaged children who viewed a lot surpassed the advantaged children who did not view or who viewed very little. The implications of this are important in terms of the children later entering school. At pretest, all disadvantaged quartiles were below the comparable advantaged quartiles in terms of test scores. At post-test there was considerable overlap among advantaged and disadvantaged children.

-- The number of children in Q1 was lowest and the number increased with each succeeding quartile -- Q4 containing the most children. Apparently, these children on the

TABLE 24

Pretest and Gain Scores for All Advantaged Children

(by quartiles)

N = 169

Test & Subtest	Maximum Possible Score	Q_1 N=16				Q_2 N=31				Q_3 N=57				Q_4 N=65			
		Pretest		Gain		Pretest		Gain		Pretest		Gain		Pretest		Gain	
		Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Grand Total	203	95.44	23.90	26.69	16.04	102.13	21.65	38.65	17.02	112.77	24.36	40.46	18.83	110.83	25.63	45.25	22.87
Body Parts Total	32	24.13	5.77	3.19	4.97	25.74	4.90	2.52	4.31	26.37	5.64	2.35	4.28	25.71	4.79	3.14	4.50
Pointing to Body Parts	5	4.13	1.15	0.25	0.93	4.35	0.75	0.29	0.86	4.30	1.10	0.30	0.98	4.49	0.77	0.09	1.03
Naming Body Parts	15	11.06	2.65	1.25	3.02	11.39	2.75	0.87	2.51	11.86	3.20	0.89	2.66	11.38	3.13	1.32	3.15
Function of Body Parts (Point)	8	5.94	2.11	1.13	2.22	6.71	1.44	0.81	1.54	6.77	1.66	0.79	1.59	6.40	1.63	1.23	1.63
Function of Body Parts (Verbal)	4	3.00	1.26	0.56	0.96	3.29	1.01	0.55	0.99	3.44	1.07	0.37	1.11	3.43	1.07	0.49	1.09
Letters Total	58	15.19	8.79	8.06	9.26	16.81	7.03	12.48	10.10	19.25	10.21	17.09	9.99	18.62	8.86	19.63	11.46
Recognizing Letters	8	2.25	2.08	1.19	2.14	2.48	1.69	2.52	2.57	3.07	2.10	2.81	2.10	3.34	2.05	2.78	2.51
Naming Capital Letters	16	1.75	3.77	3.75	4.39	2.55	3.91	5.87	4.89	3.77	4.92	7.65	5.24	3.69	4.26	8.72	4.80
Naming Lower Case Letters	8	0.56	2.00	1.13	1.54	0.52	0.81	1.97	2.23	1.02	1.55	3.37	2.51	0.78	1.24	3.66	2.68
Matching Letters in Words	4	3.56	0.81	0.31	0.87	3.45	0.72	0.55	0.72	3.47	0.87	0.37	0.96	3.26	1.08	0.58	1.27
Recognizing Letters in Words	4	1.44	1.21	0.38	1.20	1.35	0.95	0.55	1.18	1.42	1.18	1.09	1.26	1.42	1.21	1.20	1.50
Initial Sounds	4	0.63	0.96	0.19	1.33	0.68	0.70	0.52	1.18	0.95	0.87	0.39	1.35	0.77	0.80	0.89	1.06
Reading Words	6	0.0	0.0	0.06	0.25	0.0	0.0	0.10	0.30	0.04	0.26	0.30	0.65	0.03	0.17	0.35	0.69
Forms Total	20	10.63	3.48	3.00	4.23	11.35	3.20	4.32	2.74	12.37	3.05	3.88	3.59	12.31	3.15	4.62	3.39
Recognizing Forms	4	2.44	1.36	0.25	1.69	2.10	1.19	0.94	1.44	2.47	1.10	0.54	1.76	2.54	1.25	1.08	1.41
Naming Forms	4	1.31	1.01	0.88	1.82	1.32	1.14	1.29	1.22	1.81	1.17	1.10	1.23	1.68	1.00	1.46	1.20
Numbers Total	54	22.13	10.37	8.69	5.38	24.13	8.65	12.06	6.79	28.07	9.80	12.16	8.17	27.50	10.83	12.40	7.68
Recognizing Numbers	6	2.88	2.09	0.63	1.50	2.23	1.75	2.16	1.64	2.81	1.98	2.05	2.14	2.98	1.80	1.85	1.93
Naming Numbers	15	3.06	4.25	2.94	3.00	2.77	3.82	4.81	4.10	4.09	4.43	5.91	4.15	4.18	4.50	5.71	4.33
Numerosity	6	3.56	1.75	1.50	1.55	4.58	1.46	0.68	1.17	4.89	1.16	0.37	0.94	4.85	1.31	0.48	1.20
Counting	9	5.19	2.88	1.56	1.90	6.23	1.94	1.19	1.42	6.86	1.85	0.84	1.49	6.46	2.39	1.18	2.11
Addition and Subtraction	7	1.94	1.61	0.50	1.51	2.06	1.59	1.16	1.37	2.51	1.30	0.82	1.30	2.55	1.70	0.74	1.53
Matching Subtest	11	9.31	1.45	0.81	1.17	9.90	1.01	0.39	1.20	9.67	1.09	0.65	1.21	9.32	1.60	1.05	1.74
Relational Terms Total	17	10.63	2.58	1.56	2.85	10.48	2.34	2.10	2.69	11.58	1.96	1.19	2.19	11.71	2.57	1.38	2.64
Amount Relationships	9	4.75	1.39	1.13	1.15	4.68	1.54	1.52	1.67	5.61	1.46	0.40	1.72	5.52	1.52	0.80	1.61
Size Relationships	2	1.75	0.58	0.25	0.58	1.90	0.30	0.10	0.30	1.84	0.41	0.11	0.41	1.89	0.31	0.05	0.37
Position Relationships	5	3.50	1.46	0.13	1.82	3.19	1.25	0.48	1.29	3.47	1.10	0.60	1.33	3.58	1.09	0.48	1.38
Sorting Total	6	2.75	1.34	0.50	1.41	2.81	1.22	1.52	1.29	2.98	1.41	1.65	1.83	2.86	1.41	1.75	1.54
Classification Total	24	11.50	3.12	3.69	5.33	14.03	3.56	4.97	4.01	15.19	4.21	4.58	4.95	15.11	4.23	4.55	4.27
Classification by Size	2	1.00	0.73	0.50	1.10	1.45	0.68	0.29	0.64	1.47	0.68	0.37	0.84	1.55	0.66	0.26	0.78
Classification by Form	6	2.38	1.41	0.88	2.22	3.06	1.36	1.39	1.50	3.16	1.52	1.54	1.74	3.26	1.43	1.37	1.59
Classification by Number	6	2.19	1.05	1.06	1.61	2.55	1.18	1.16	2.02	3.05	1.51	1.14	2.17	2.91	1.49	1.12	1.76
Classification by Function	9	5.56	1.36	1.06	1.48	6.32	1.60	2.06	1.86	6.89	1.47	1.49	1.78	6.74	1.73	1.68	1.78
Puzzles Total	5	2.75	1.18	0.13	0.96	2.23	1.15	1.23	1.41	2.93	1.42	0.79	1.59	3.15	1.21	0.48	1.60
Peabody Raw Score (Pretest only)	80	42.31	9.48			49.45	8.18			49.19	9.93			48.12	9.39		
Peabody Mental Age (Months)	--	51.56	11.97			62.03	13.34			62.49	15.55			60.29	15.51		
Hidden Triangles Total (Posttest)	10	4.38	1.20			4.71	1.13			4.33	1.46			4.45	1.31		
Which Comes First Total	12	6.00	2.88			7.06	2.93			7.79	2.49			8.40	2.83		

average watched more of the show than the groups of disadvantaged children previously discussed. Parent Questionnaire results show that only five of the 15 children in Q1 never watched the show, a much lower proportion than in the disadvantaged groups.

Grand Total pretest means in all quartiles were higher than the means for other groups of children. This of course was expected since these children were initially labeled advantaged. Gain scores on the Grand Total indicate that children in all quartiles learned during the six months between pretesting and posttesting. However, those who viewed more of the show gained more. The biggest difference in mean gain scores occurred between Q1 and Q2:

Q1 gained 26.7

Q2 gained 38.7

Q3 gained 40.5

Q4 gained 45.3

It appears that the advantaged children benefited a great deal from watching relatively little of the show. However, additional viewing did result in additional gains. This can be seen by looking at the pretest means of Q3 and Q4 (Q3 surpassing Q4 by about two points) and gains for these two groups (Q4 gains being greater than Q3 gains by about five points). As a result, the total posttest mean of Q4 was the highest.

In the Letters Test, differential gains between Q2 and Q3 were as great as those between Q1 and Q2. In this area, additional viewing increased learning. In the more difficult areas such as Initial Sounds and Reading Words, the higher viewing groups gained most. Thus, Q4 gains in Initial Sounds and Reading Words were larger than those of any other quartile.

-- In the Numbers Test, gains in Q2, Q3, and Q4 were about the same, all being larger than gains in Q1. This is also true for the Forms, Sorting, and Classification Tests, where Q1 gains were always lowest and Q2, Q3, and Q4 gains were higher although not necessarily in that order. It seems that in all of these areas, a little watching produced large gains.

-- Means on the Which Comes First Test increased monotonically as amount of viewing increased. This relationship was not always so clear in subgroups of the disadvantaged sample, indicating that this problem-solving goal was more appropriate (or more appropriately taught) for more advantaged children.

-- Scores on the PPVT show that advantaged children in Q2, Q3, and Q4 had comparable mental ages, averaging over 60 months. The mean mental age of children who watched the show least (Q1) was a good deal lower (51.6 months).

Tables 25 and 26 present parent questionnaire data for the advantaged group. None of the scales in Table 25 show significant differences among viewing quartiles except the pretest Child Affluence scale where Q2 parents reported lower affluence ($p<.01$). This difference disappeared at posttest. Other points worthy of note follow.

-- The Child Educational Uses Index decreased in all quartiles from pretest to posttest. This might be explained by the fact that parents were reporting more frequent summer trips at pretest (the questionnaire was completed in October) and less frequent winter trips at posttest.

-- The mean years of parents' education was 13.7 years and was over 13 years in each of the four quartiles. Clearly these parents were better educated than the parents of our other subgroups -- for the disadvantaged sample, for example, the corresponding mean was less than 11 years.

-- Children who watched Sesame Street the most had mothers who often talked with them about the show ($p<.05$). These children more often played games based on Sesame Street ($p<.001$).

-- Mothers of children who viewed most felt the show had been most helpful for their children ($p<.001$).

-- Color TV did not seem to be a significant factor influencing amount of viewing.

In summary, almost all of the advantaged children watched some of Sesame Street, and the majority watched the show very often. Children who watched the most tended to show the highest gains. However, it appears that a relatively small amount of viewing also produced relatively large gains in most goal areas.

FIGURE 7a

Pretest and Gain on Total Test Score for All Advantaged Children
(by viewing quartiles)
N=169

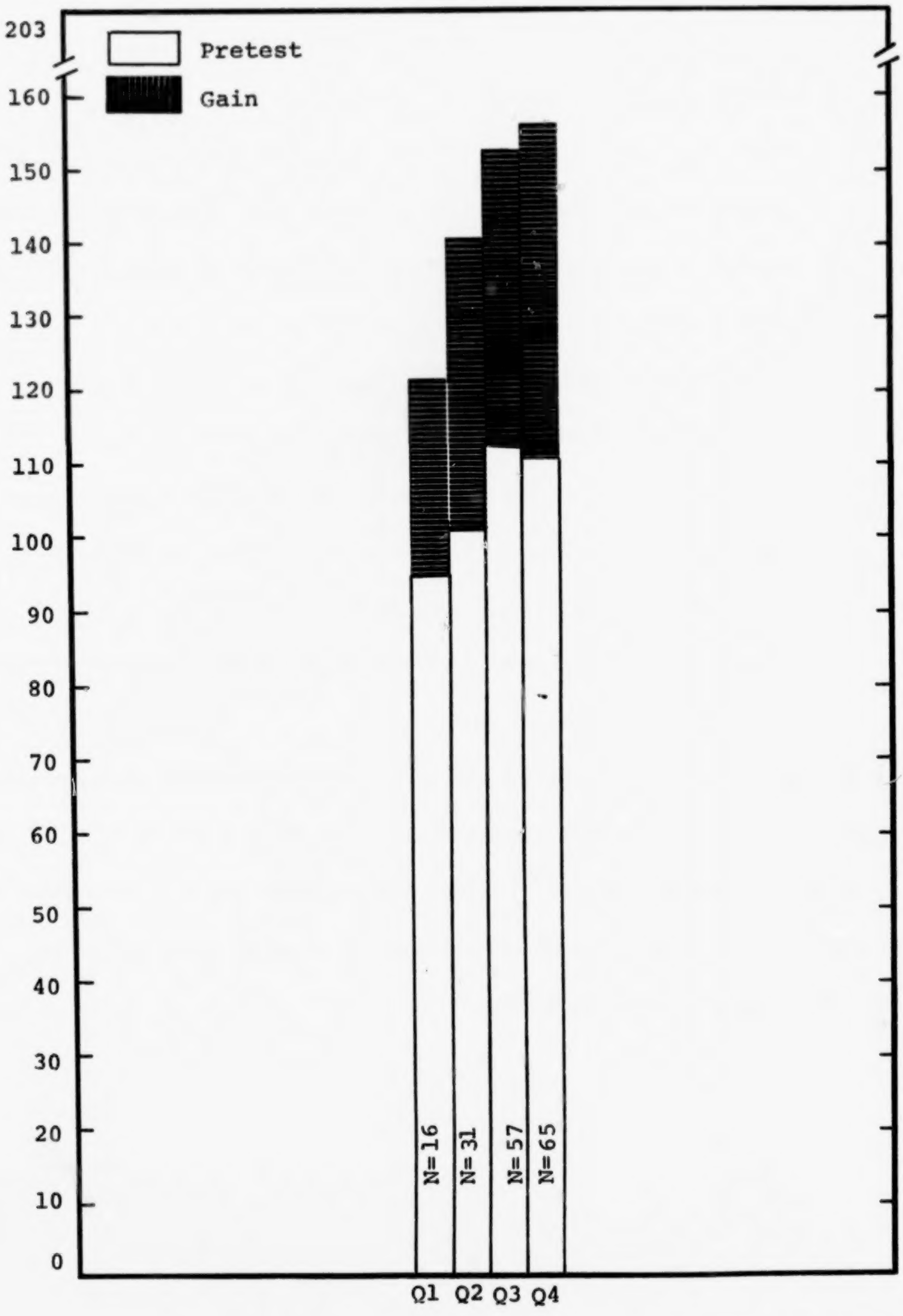


FIGURE 7b

Selected Pretest and Gain Scores for All Advantaged Children

(by viewing quartiles) Q1=16 Q2=31 Q3=57 Q4=65

Dashed lines beneath test titles indicate maximum possible scores.

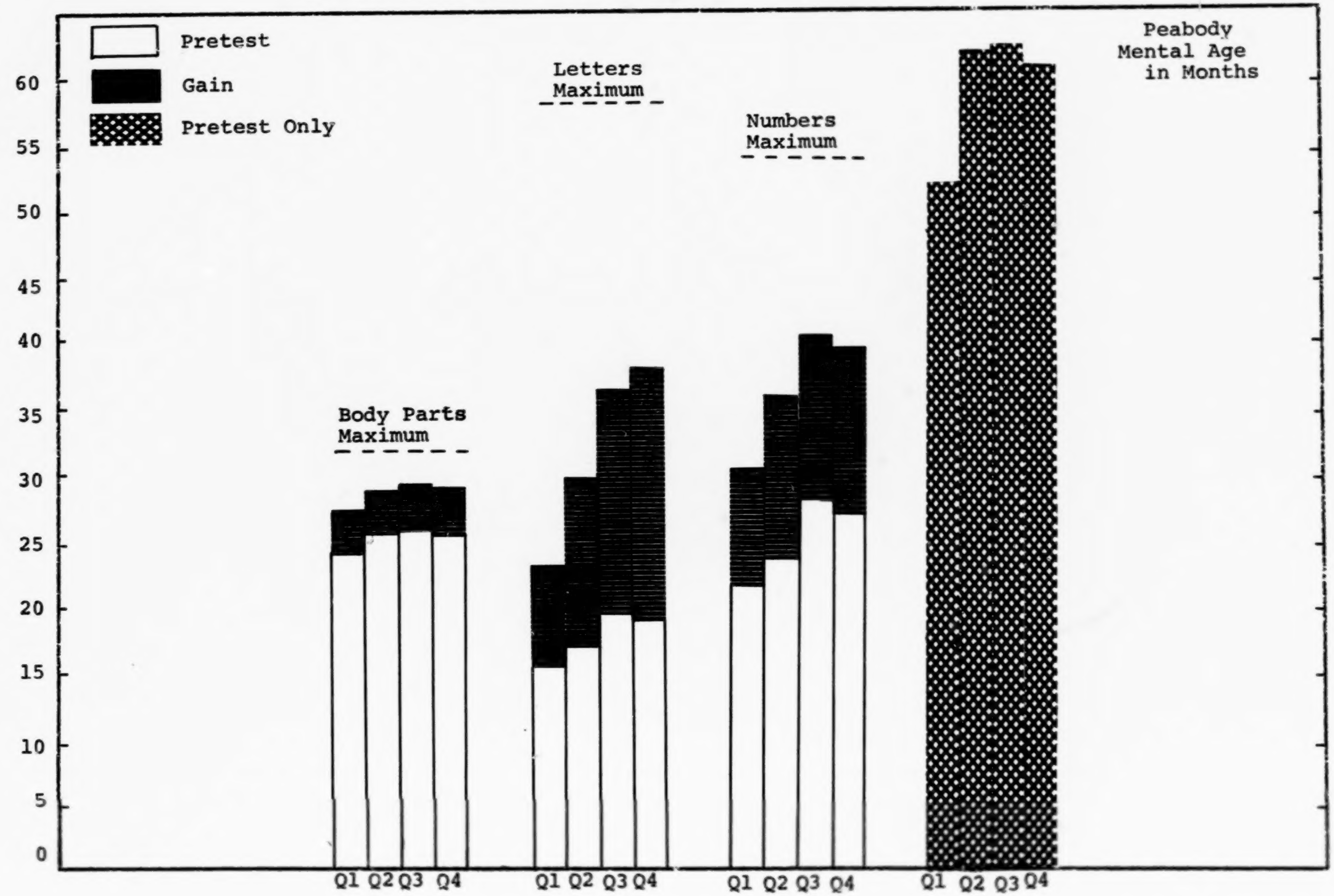


FIGURE 7c

Selected Pretest and Gain Scores for All Advantaged Children

(by viewing quartiles) Q1=16 Q2=31 Q3=57 Q4=65

Dashed lines beneath test titles indicate maximum possible scores.

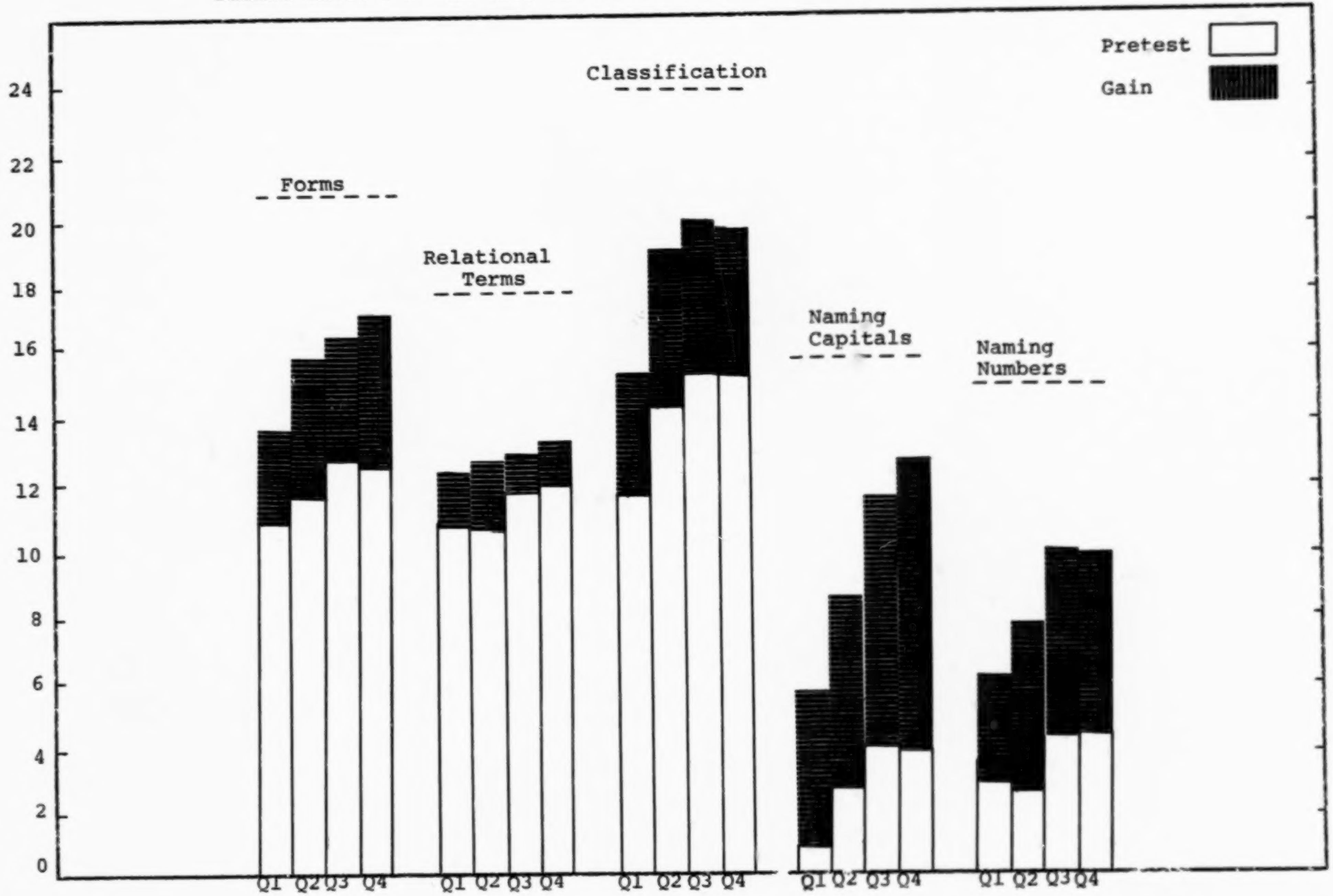


FIGURE 7d

Selected Pretest and Gain Scores for All Advantaged Children

(by viewing quartiles) Q1=16 Q2=31 Q3=57 Q4=65

Dashed lines beneath test titles indicate maximum possible scores.

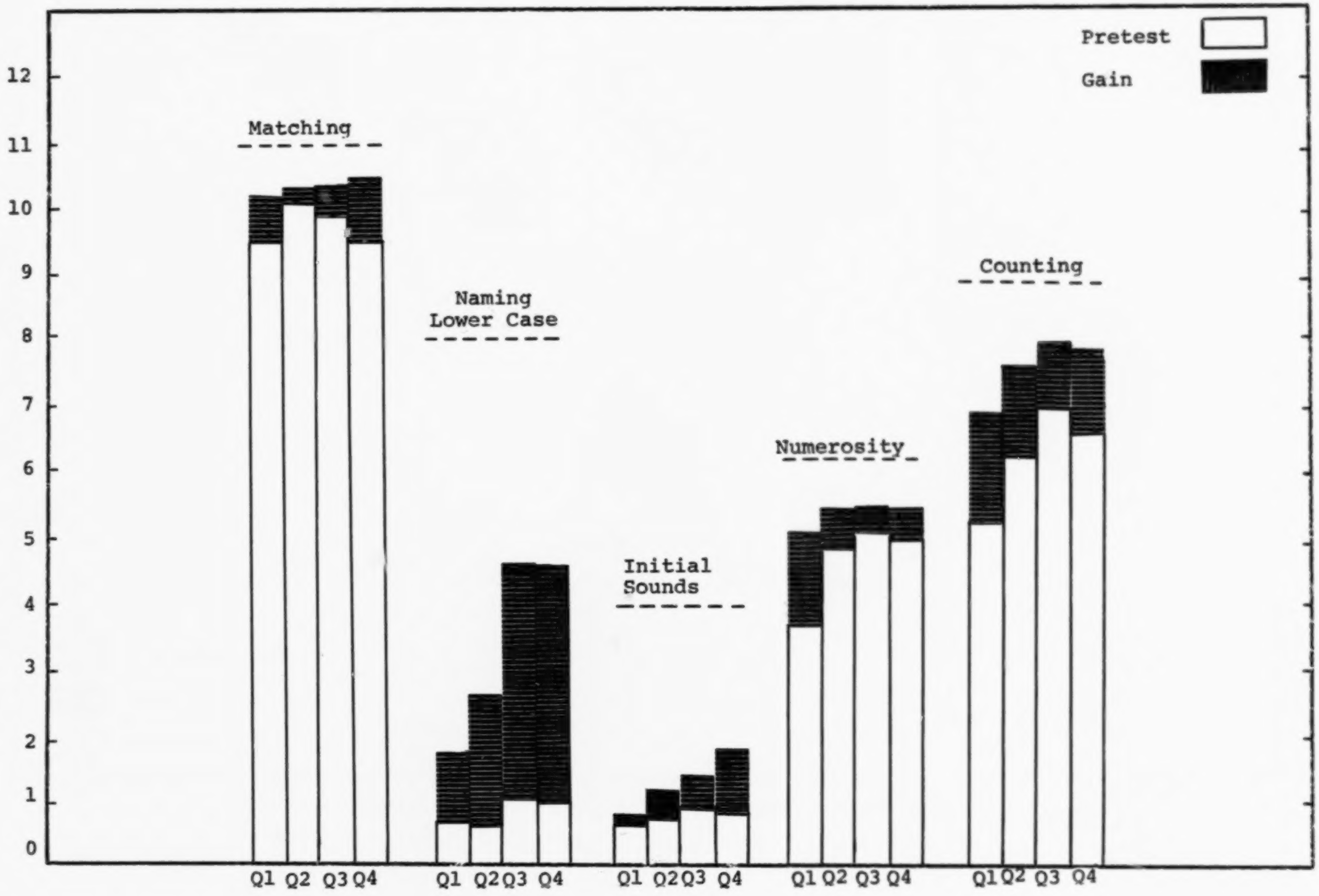


FIGURE 7e

Selected Pretest and Gain Scores for All Advantaged Children
(by viewing quartiles) Q1=16 Q2=31 Q3=57 Q4=65
Dashed lines beneath test titles indicate maximum possible scores.

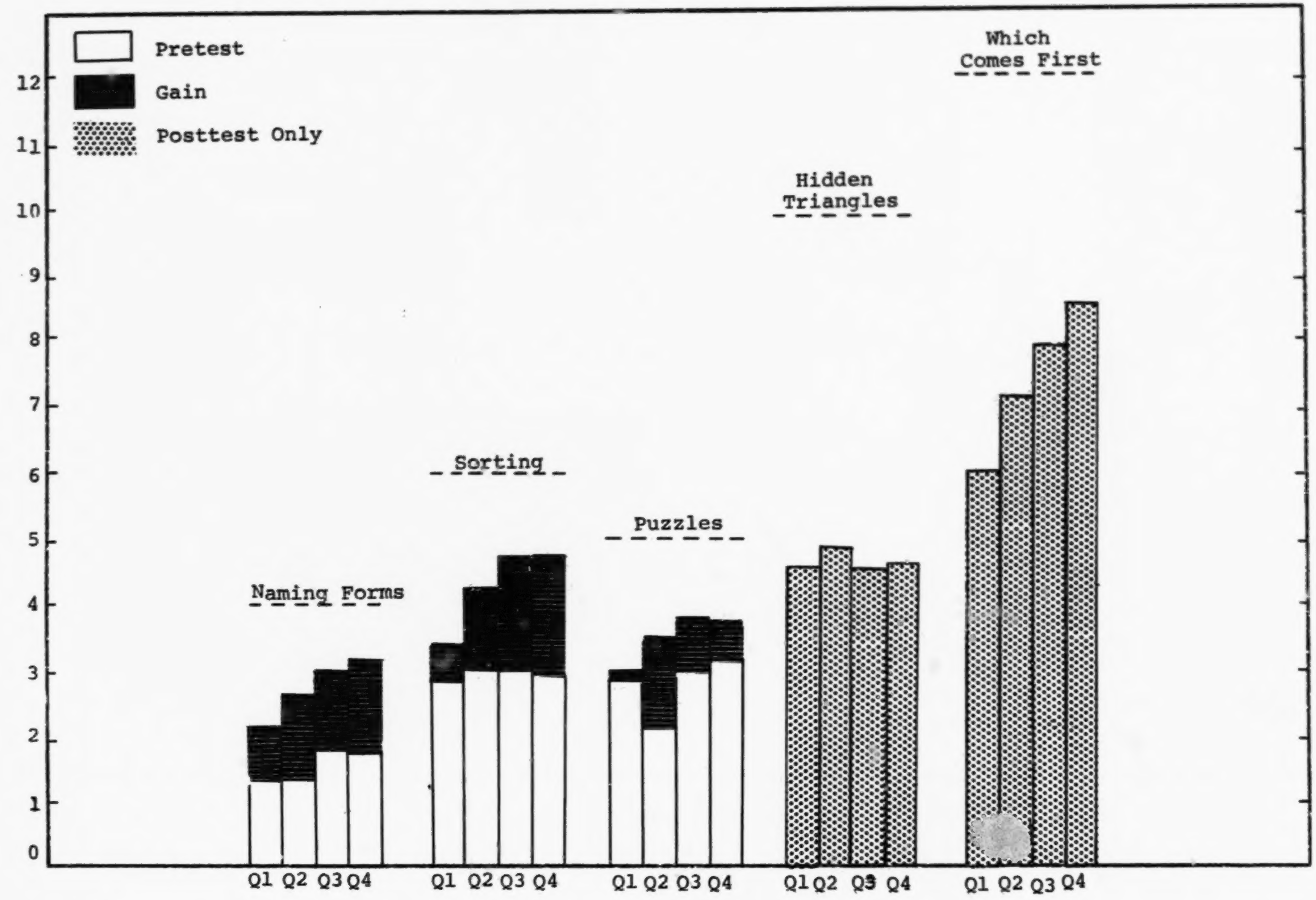


TABLE 25

Parent Questionnaire Scales for All Advantaged Children

(by quartiles)

	Maximum Possible Score	Total N= 166		Q1 N= 15		Q2 N= 29		Q3 N= 57		Q4 N= 65		P
		Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	
Parents'Expectation												
Pre	50	41.0	4.7	40.9	4.4	39.7	6.1	41.3	4.0	41.4	4.7	.416
Post	50	40.9	3.6	40.5	4.1	40.1	4.1	41.1	3.5	41.1	3.5	.613
Child Affluence												
Pre	6	4.3	1.1	4.6	1.1	3.6	1.5	4.4	1.0	4.4	1.0	.003
Post	6	4.3	1.2	4.3	1.0	4.1	1.5	4.4	1.1	4.4	1.1	.609
Child Educational Uses												
Pre	21	4.2		4.3		4.0		4.3		4.2		
Post	21	2.9		2.8		3.1		3.0		2.9		
Parents' Affluence	14	12.3	1.2	12.3	1.2	12.3	1.5	12.2	1.2	12.3	1.1	.868
Mean Years of Parents' Education	16	13.7	1.6	13.2	1.7	13.6	2.1	13.6	1.5	13.9	1.5	.533

TABLE 26

Selected Parent Questionnaire Items for all Advantaged Children

(by quartiles)

		P		Pretest Questionnaire*				Posttest Questionnaire*			
		Pre	Post	Q1 N=16	Q2 N= 31	Q3 N=57	Q4 N=65	Q1 N=15	Q2 N=29	Q3 N=57	Q4 N= 65
How often child uses art things at home.	Once a day	ns	ns	56%	42%	46%	66%	47%	45%	42%	62%
	Several a week			44	39	40	26	53	45	44	35
	Once a week or less			0	19	14	8	0	10	14	3
	Never			0	0	0	0	0	0	0	0
	Don't know			0	0	0	0	0	0	0	0
What mother usually does with child.	Plays with him	ns	ns	81	61	61	65	87	52	75	77
	Reads to him	ns	ns	81	71	81	78	93	83	89	91
	Housework	ns	ns	100	100	95	97	93	100	95	100
	Watches TV	ns	ns	19	16	11	18	7	24	23	28
	Watches TV with him	ns	ns	56	45	39	43	67	72	70	75
	Reads by herself	ns	ns	50	23	28	23	60	66	40	35
How often child is read to.	Once a day	.01	ns	31	26	49	42	20	10	37	31
	Several a week			31	58	37	48	60	69	49	51
	Once a week or less			38	13	14	11	20	21	11	17
	Never			0	3	0	0	0	0	2	0
	Don't know			0	0	0	0	0	0	0	0
Do most children have to be forced to learn?	Almost all the time	ns	ns	0	0	0	2	0	0	0	0
	Most of the time			0	10	12	5	0	3	5	6
	Sometimes			94	71	58	64	73	86	65	54
	Never			6	13	28	29	27	10	30	40
Does your child have to be forced to learn?	Almost all the time		ns	**				0	0	0	0
	Most of the time							0	0	4	5
	Sometimes							53	69	53	37
	Never							47	31	40	58

ns = not statistically significant
Probabilities in parenthesis should be interpreted with caution since they were computed on small expected cell frequencies.

*Responses do not always total 100% because of some incomplete questionnaires.

**Question not asked in this questionnaire.

TABLE 26

Selected Parent Questionnaire Items for all Advantaged Children

(by quartiles)

		P		Pretest Questionnaire				Posttest Questionnaire			
		Pre	Post	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Hours child watched TV yesterday.	6 or more	ns	ns	0%	0%	0%	0%	0%	0%	4%	5%
	4 or 5			0	16	16	9	7	10	16	18
	2 or 3			44	39	35	38	20	31	26	31
	Less than 2			50	45	44	51	73	59	54	46
Does child ever watch local ETV?	Yes	ns	(.001)	13	23	40	52	60	97	100	100
Mother watches Sesame Street with child.	Almost always		ns	**				7	7	7	11
	Usually							7	14	19	22
	Sometimes							33	69	65	58
	Hardly ever							20	10	9	9
	No Sesame Street							33	0	0	0
Mother and child talk about Sesame Street.	Almost always		(.05)	**				7	7	14	26
	Usually							13	21	39	40
	Sometimes							40	62	39	34
	Hardly ever							7	10	9	0
	No Sesame Street							33	0	0	0
Child plays games based on Sesame Street.	Almost always		(.001)	**				0	0	4	6
	Usually							0	3	9	9
	Sometimes							13	34	53	68
	Hardly ever							20	41	28	14
	Don't know							33	21	7	3
	No Sesame Street							33	0	0	0
How helpful is Sesame Street for your child?	Not helpful		(.001)	**				0	0	0	0
	Somewhat							33	31	9	5
	Very							20	69	89	94
	Don't know							13	0	2	0
	No Sesame Street							33	0	0	0

TABLE 26

Selected Parent Questionnaire Items for all Advantaged Children

(by quartiles)

		P		Pretest Questionnaire				Posttest Questionnaire			
		Pre	Post	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Kind of TV on which child watches Sesame Street.	Black & white		ns		**			33%	62%	58%	68%
	Color							33	31	42	29
	No Sesame Street							33	0	0	0
Employment of male head of household.	35 hours a week or more	ns		100	100	100	100		**		
	10-35 hours			0	0	0	0				
	Less than 10 hours			0	0	0	0				
	Other			0	0	0	0				
Number of people living in child's home.	2	ns		0	0	0	0		**		
	3-4			19	23	42	35				
	5-6			56	58	46	44				
	7-8			13	10	9	11				
	Over 8			13	10	4	9				
Number of rooms in house.	1-2	ns		0	0	0	0		**		
	3-4			0	3	0	2				
	5-6			25	32	37	26				
	7-8			50	42	54	54				
	Over 8			19	23	9	18				

8. Spanish-Speaking Children

A small group of Spanish-speaking (Chicano) children in Phoenix were included in the evaluation as a pilot study of the effects of Sesame Street on this large segment of our population. The descriptive data that follow must be interpreted with extreme caution since the N's in each quartile are so small and differences might merely be reflecting peculiarities of our very select sample. A more extensive study of Sesame Street II and Spanish-speaking children is now underway.

The 43 children in this sample came from homes identified by local community leaders in Phoenix as Spanish-speaking. There were other Spanish background children in the total group, but they were not included in these data because English was the language spoken in their homes. In order to estimate the extent to which Spanish was spoken by the 43 children, questionnaires were completed in March, 1970 by the tester-observers who had been visiting the children and their parents regularly. (Appendix K presents a copy of this questionnaire.) For each child, testers were asked to make an estimate on a three-point scale for each of these three questions:

1. How often is Spanish spoken in the home?
2. How much does the child speak Spanish in the home?
3. How much English does the child speak?

Questionnaires were completed for the 43 children. The results of the three estimates were then summed (minimum score of 3 meaning strong Spanish language background and maximum of 9 meaning light Spanish language background).

Results indicate that 10 children had strong Spanish language influences, 17 had mixed Spanish and English influences, and 16 had considerably in their prior experiences with both Spanish and English. Some of the children were tested solely in English; when necessary, some were tested in Spanish by bilingual testers.

So, with the full realization of the tentativeness of any possible conclusions, the test results of the 43 Spanish-speaking children will now be presented. The test data are presented in Table 27. Figures 8a-e present some of these data graphically.

The following comments all describe trends that appear to have occurred, and in the future all will be investigated more extensively with larger groups of children.

-- The largest group of children was in Q1, those watching none or little of the show. The Grand Total pretest mean for Q1 children was much lower than the means of higher viewing quartiles, but pretest means for Q2, Q2, and Q4 were almost identical.

— For all quartiles, pretest means on the Grand Total were low in comparison to other groups of children previously discussed. This was to be expected as some of the children lacked familiarity with English and with some of the subject matter.

-- Gain scores on the total test for Q3 and Q4 children were much larger than those previously observed with any other groups of children.

Q1 gained 24.4

Q2 gained 29.6

Q3 gained 49.9

Q4 gained 75.6

TABLE 27

Pretest and Gain Scores for All Spanish Speaking Children

(by quartiles)

N = 43

Test & Subtest	Maximum Possible Score	Q 1 N=14				Q 2 N=11				Q 3 N=7				Q 4 N= 11			
		Pretest		Gain		Pretest		Gain		Pretest		Gain		Pretest		Gain	
		Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Grand Total	203	64.93	14.75	24.36	21.78	83.09	14.45	29.64	17.68	84.14	30.65	49.86	8.99	84.91	14.10	75.55	15.97
Body Parts Total	32	12.21	7.37	6.50	7.15	17.09	6.73	5.27	7.00	17.43	8.52	8.57	4.61	21.09	6.14	7.45	4.44
Pointing to Body Parts	5	1.71	1.49	1.64	2.17	2.55	1.75	1.27	1.35	2.43	2.23	1.71	1.80	3.91	1.38	0.82	0.98
Naming Body Parts	15	5.79	2.96	1.71	2.67	7.00	2.65	1.73	3.17	8.14	3.93	3.71	2.56	9.36	2.34	3.36	2.06
Function of Body Parts (Point)	8	3.29	2.46	2.21	2.55	5.27	2.33	1.45	2.38	5.00	1.63	1.57	1.72	5.45	2.77	1.91	2.77
Function of Body Parts (Verbal)	4	1.43	1.45	0.93	2.09	2.27	1.42	0.82	1.94	1.86	1.77	1.57	1.51	2.36	1.75	1.36	1.50
Letters Total	58	12.57	2.53	4.07	7.89	14.00	3.10	6.27	5.61	13.71	5.59	18.86	7.90	12.00	2.65	27.73	9.78
Recognizing Letters	8	2.36	1.50	-0.14	2.45	2.36	1.43	1.00	2.14	2.14	2.12	3.57	2.57	1.64	1.03	5.27	2.05
Naming Capital Letters	16	0.64	1.39	1.57	3.84	0.64	0.67	3.18	4.58	0.86	1.46	9.71	6.29	0.36	0.67	11.82	3.71
Naming Lower Case Letters	8	0.07	0.27	0.71	1.38	0.45	0.52	0.09	1.14	0.14	0.38	3.14	1.86	0.18	0.40	4.55	2.16
Matching Letters in Words	4	2.86	1.10	0.71	1.07	3.18	1.25	0.73	1.35	3.57	1.13	0.43	1.13	0.36	0.67	0.64	0.67
Recognizing Letters in Words	4	1.64	1.01	0.29	0.83	1.36	0.81	0.18	1.40	1.71	1.11	0.86	1.22	0.82	0.75	2.18	1.33
Initial Sounds	4	0.36	0.63	0.29	0.91	0.73	0.90	0.09	0.94	0.14	0.38	0.57	1.13	0.45	0.52	1.18	1.54
Reading Words	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.45	0.69
Forms Total	20	8.[illegible]6	2.59	2.86	2.85	10.91	2.70	4.27	2.49	10.28	3.95	5.00	4.69	9.64	3.67	7.45	3.27
Recognizing Forms	4	1.64	0.93	0.07	1.38	3.00	1.18	0.18	1.60	2.14	0.90	1.14	1.95	2.09	1.22	1.00	1.18
Naming Forms	4	0.79	0.70	1.00	0.96	1.09	0.94	1.45	1.44	1.86	1.22	1.29	0.95	1.27	1.42	2.27	1.74
Numbers Total	54	13.50	4.64	7.00	6.32	19.09	4.16	9.73	5.61	19.29	7.74	13.43	6.13	25.54	5.99	21.45	5.52
Recognizing Numbers	6	1.07	0.92	1.00	1.52	1.82	0.98	1.36	1.63	2.00	1.41	2.14	1.68	1.73	1.62	2.18	2.56
Naming Numbers	15	0.36	0.74	1.14	2.28	0.82	1.25	3.27	3.69	0.57	1.13	5.86	3.80	1.64	2.98	8.91	3.56
Numerosity	6	2.71	1.27	0.64	1.60	3.91	1.45	0.91	1.38	3.71	1.89	0.71	1.60	3.73	0.90	2.00	0.77
Counting	9	4.14	2.07	1.36	2.31	5.45	2.34	1.73	1.90	5.57	2.15	2.00	1.73	5.91	1.51	3.00	1.55
Addition and Subtraction	7	0.64	0.84	0.93	1.07	1.82	1.08	0.18	1.89	1.29	0.76	1.00	1.91	1.82	0.87	1.73	1.19
Matching Subtest	11	8.57	1.50	1.21	1.63	9.36	1.69	0.91	1.51	8.71	2.75	0.86	2.73	9.18	1.40	1.18	2.04
Relational Terms Total	17	7.71	2.27	2.14	2.82	9.91	2.12	1.45	2.16	9.71	1.98	1.71	2.29	8.73	1.90	5.27	2.94
Amount Relationships	9	3.50	1.56	1.00	1.57	4.55	0.93	1.00	1.73	4.71	1.25	0.71	1.80	4.00	1.55	3.27	2.10
Size Relationships	2	1.79	0.42	0.14	0.53	1.91	0.30	0.09	0.30	1.71	0.49	0.29	0.49	1.55	0.52	0.36	0.50
Position Relationships	5	2.29	1.44	0.64	1.82	2.91	1.22	0.18	1.33	2.71	1.50	0.71	0.95	3.00	0.63	1.00	1.00
Sorting Total	6	1.86	0.77	0.57	1.28	2.73	1.10	0.73	1.35	3.57	1.81	-0.29	1.98	2.64	1.21	2.00	1.55
Classification Total	24	10.64	3.30	2.43	5.68	11.27	1.90	5.00	4.34	12.29	5.35	4.57	4.86	11.91	5.09	8.36	4.65
Classification by Size	2	1.07	0.70	0.21	0.89	1.27	0.90	0.09	1.04	1.28	0.95	0.43	0.98	1.09	0.83	0.73	1.01
Classification by Form	6	2.07	1.27	0.71	1.82	2.09	0.83	1.55	1.37	2.14	0.90	1.71	1.98	2.18	1.40	2.73	1.49
Classification by Number	6	1.71	1.20	1.21	1.65	1.82	0.98	1.45	1.97	2.43	1.40	0.71	2.63	2.36	1.63	2.18	1.72
Classification by Function	9	5.29	1.27	0.36	2.71	5.45	0.93	1.91	1.30	5.86	3.08	1.57	1.90	5.64	2.01	2.64	1.57
Puzzles Total	5	1.78	0.80	1.07	1.59	2.55	1.29	0.55	1.51	2.29	1.50	1.14	1.57	2.73	1.27	1.18	1.08
Peabody Raw Score (Pretest only)	80	27.78	8.84			35.00	8.75			33.14	12.60			38.64	9.65		
Peabody Mental Age (Months)	--	35.93	7.06			42.64	11.00			41.29	11.01			46.73	11.70		
Hidden Triangles Total (Posttest)	10	4.05	1.50			4.55	1.53			4.82	1.59			4.73	1.45		
Which Comes First Total (Posttest)	12	4.51	2.21			5.48	2.63			6.25	2.87			6.83	2.83		

It can be seen that gains between Q1 and Q2 were relatively small, but that gains between Q2 and Q3 and between Q3 and Q4 were unusually large. In fact, mean gains for Q3 Spanish-speaking children were similar to the gains of Q4 children in the other groups discussed, and Q4 gains here were much larger than those noted for any other group of children.

-- In the Letters Test total, the pretest mean of Q4 children was the lowest of any other quartile's mean. However, Q4 children showed by far the largest gain: Q1 gained 4.1; Q2 gained 6.3; Q3 gained 18.9; and Q4 gained 27.7. This very striking result was again evident in subtests dealing with Naming Capital Letters (where the Q4 pretest mean was less than one letter and the gain was 11.8 letters of the 16 asked) and Naming Lower Case Letters. The other subtests in the area of letters show similar if less striking results.

-- The results of the Forms, Numbers, Relational Terms, Sorting, and Classification Tests present numerous examples of the above trend. Q4 gains in these test scores were invariably highest, even when pretest means were lower than those of other quartiles. This is also true for many of the subtests including Naming Forms, Naming Numbers, Numerosity, Counting, and Addition and Subtraction.

-- Scores on the PPVT show that the mean mental age of Q4 children (46.7 months) was higher than the other quartiles and that the mental age of Q1 children was lowest (35.9 months). However, although Q2 and Q3 children scored about the same (mean mental ages of 42.6 months and 41.3 months respectively), yet the mean gain in Q3 on the Grand Total was a great deal larger than that in Q2.

Tables 28 and 29 present Parent Questionnaire information about the Spanish-speaking children. The questionnaires were translated into Spanish for mothers if needed. The following observations seem worthy of note:

-- None of the pretest or posttest scales show significant differences among quartiles. One should note the low number of respondents in each quartile -- thereby lowering drastically the power of the statistics.

-- The observed differences, though not significant, were large and in the expected direction. Therefore it is reasonable to expect that a replication of this study with a large N might produce statistical significance. With this in mind, special attention should be paid to the Parents' Affluence and SES Indices, where Q4 means appear considerably larger than those in Q1. However, the SES Index also shows that the mean years of parents' education was similar in Q2 and Q4, yet amount of viewing and resultant learning were very dissimilar (favoring Q4).

-- The SES Index also shows that parents of these children had relatively few years of formal education (mean of 9.0).

-- Two items from the posttest questionnaire were significant. Children who watched a lot of Sesame Street had parents who usually read to them ($p<.05$) and had mothers who talked with them about the show ($p<.01$).

In conclusion, these data indicate very dramatic gains associated with heavy viewing by Spanish-speaking children. Whereas pretest means were relatively low, gains in most goal areas were extraordinarily large. However, all descriptions are based on only 43 children, and any conclusions drawn must be tempered with that fact.

FIGURE 8a

Pretest and Gain on Total Test Score for All Spanish-Speaking Children

(by viewing quartiles)

N=43

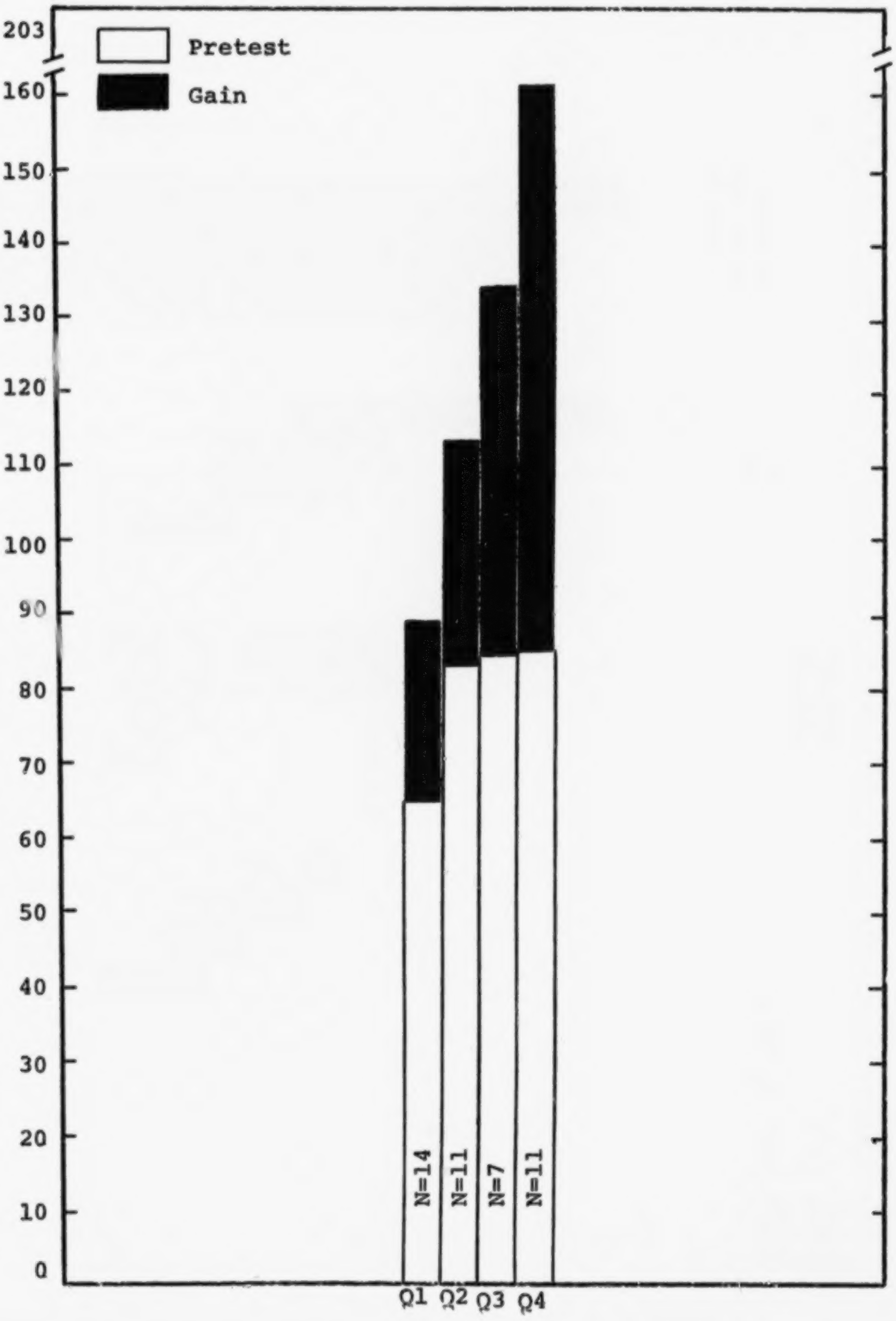


FIGURE 8b

Selected Pretest and Gain Scores for All Spanish-Speaking Children

(by viewing quartiles) Q1=14 Q2=11 Q3=7 Q4=11

Dashed lines beneath test titles indicate maximum possible scores.

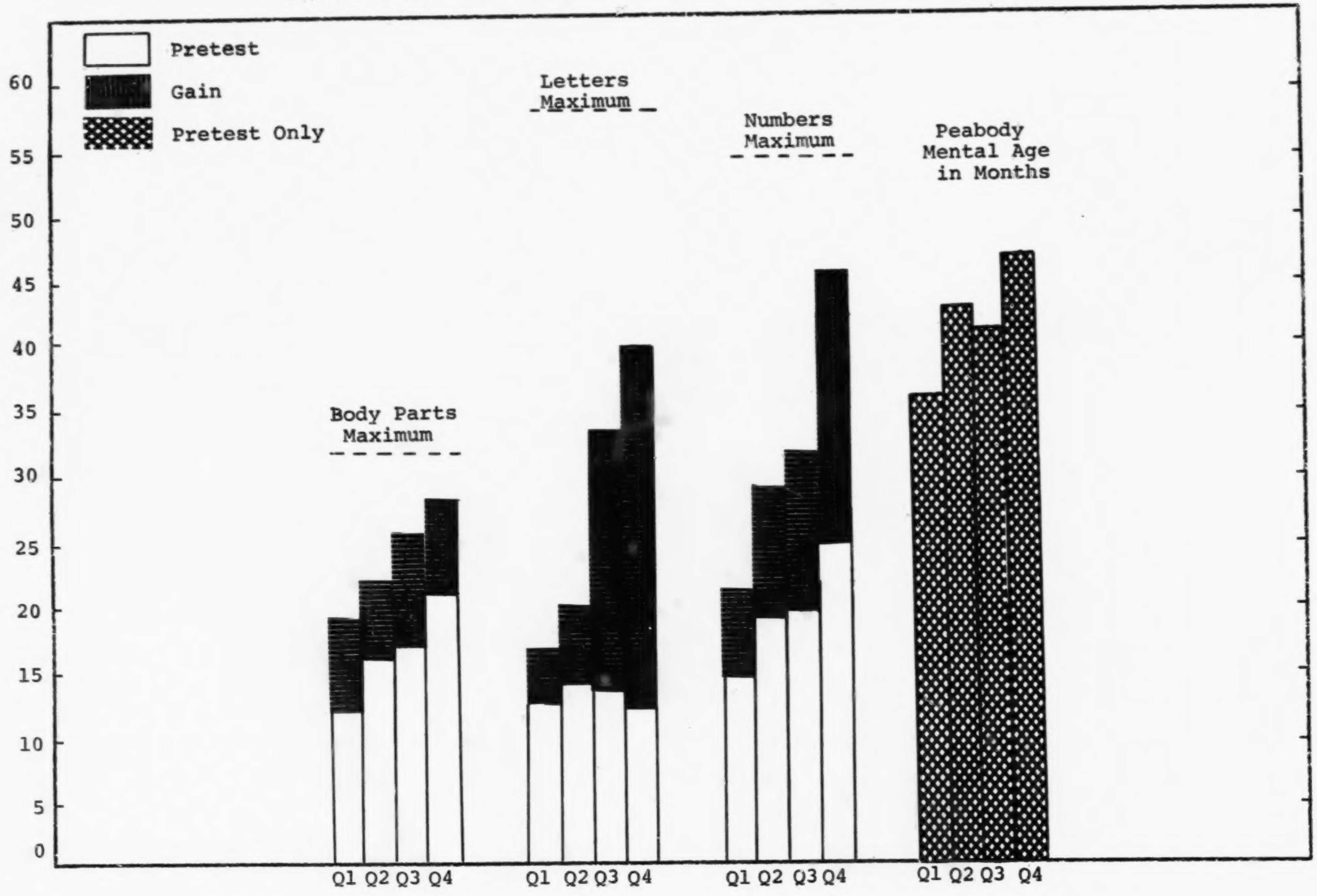


FIGURE 8c

Selected Pretest and Gain Scores for All Spanish-Speaking Children
(by viewing quartiles) Q1=14 Q2=11 Q3=7 Q4=11
Dashed lines beneath test titles indicate maximum possible scores.

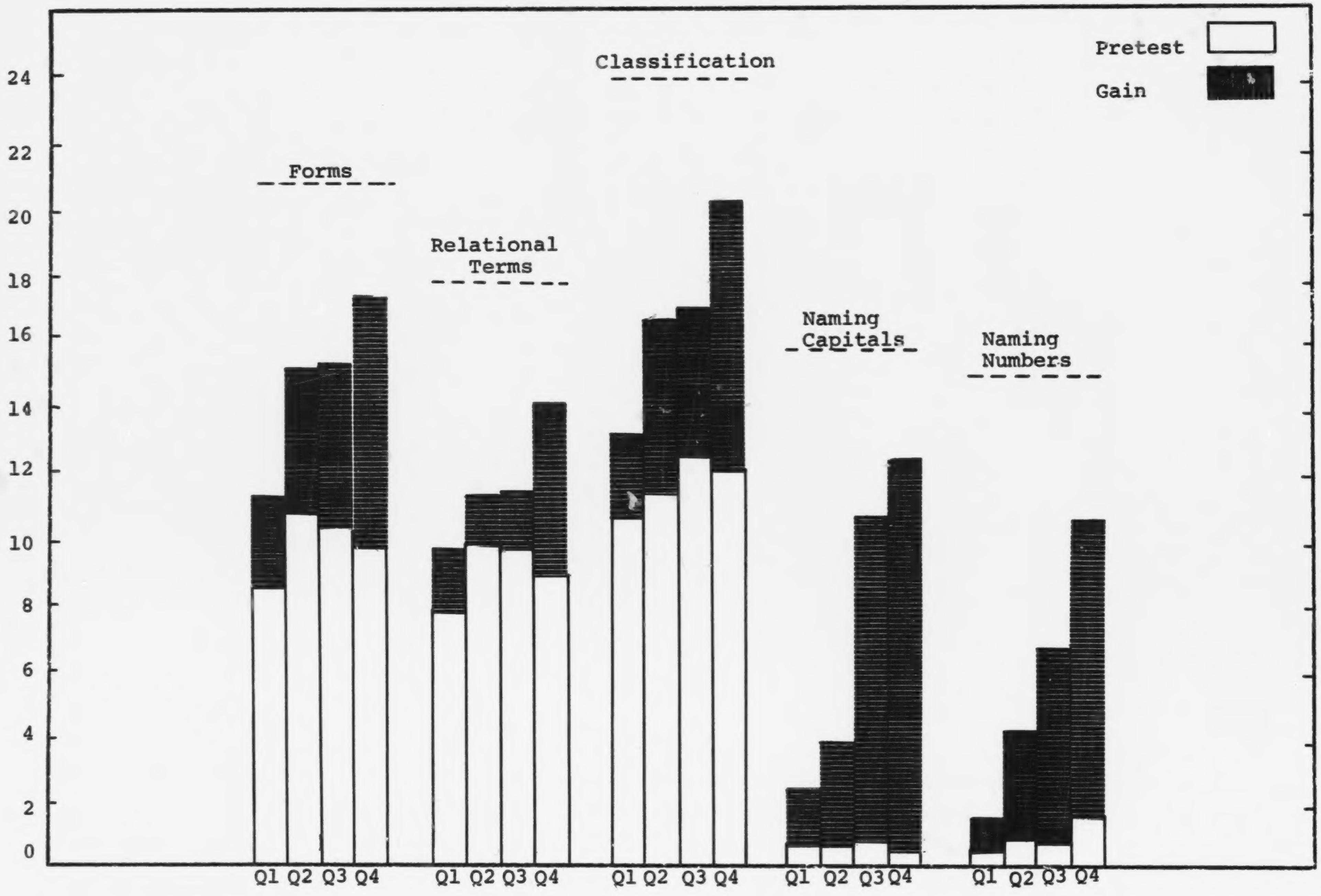


FIGURE 8d

Selected Pretest and Gain Scores for All Spanish-Speaking Children

(by viewing quartiles) Q1=14 Q2=11 Q3=7 Q4=11

Dashed lines beneath test titles indicate maximum possible scores.

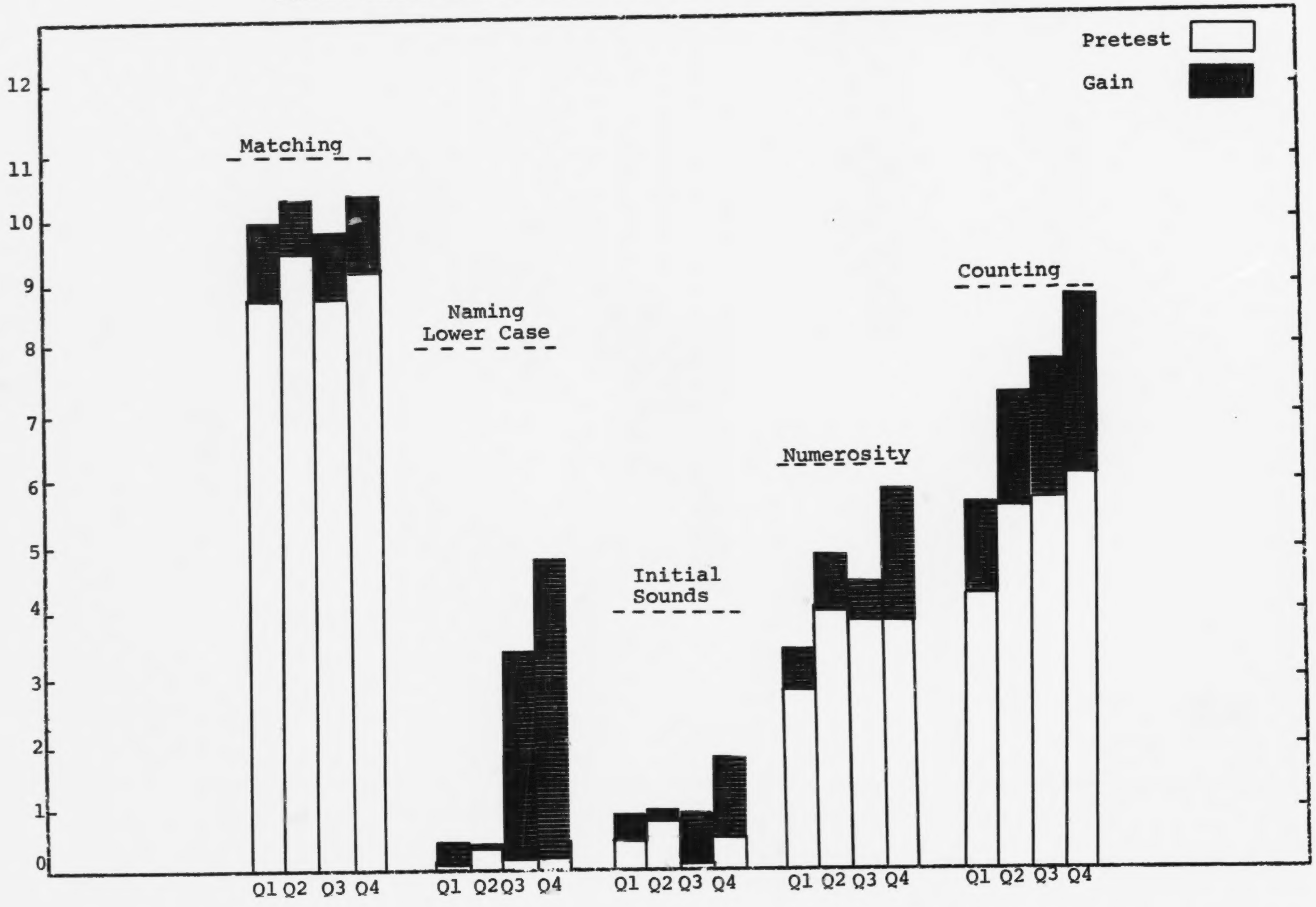


FIGURE 8e

Selected Pretest and Gain Scores for All Spanish-Speaking Children

(by viewing quartiles) Q1=14 Q2=11 Q3=7 Q4=11

Dashed lines beneath test titles indicate maximum possible scores.

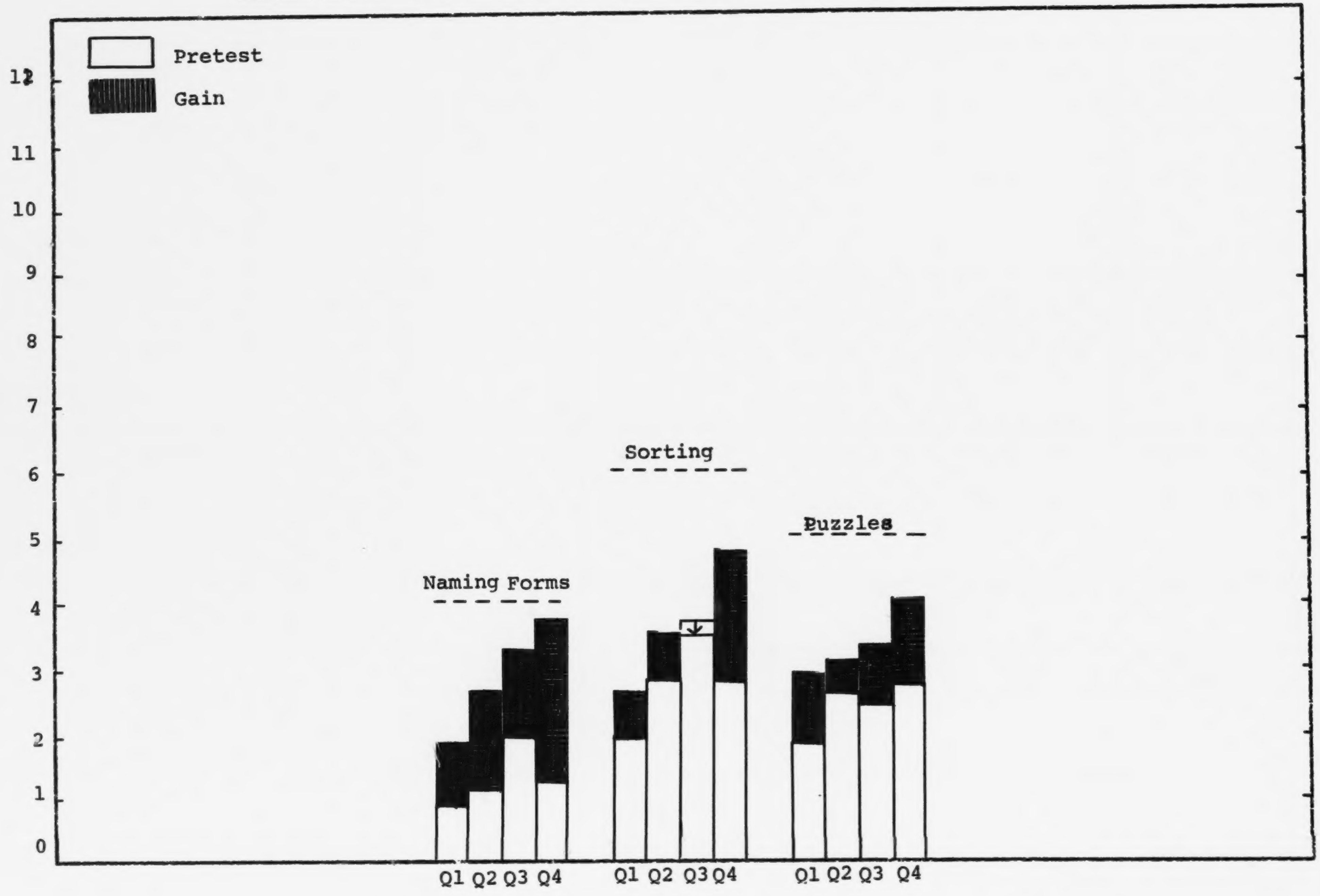


TABLE 28

Parent Questionnaire Scales for All Spanish-Speaking Children

(by quartiles)

		Total N= 38		Q1 N= 12		Q2 N= 10		Q3 N= 6		Q4 N= 10		P
	Maximum Possible Score	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	
Parents'Expectation												
Pre	50	35.2	6.6	32.9	6.6	33.1	7.2	38.0	7.4	38.2	4.2	.133
Post	50	34.3	5.5	32.3	7.3	33.2	3.3	37.7	6.1	34.3	5.5	.197
Child Affluence												
Pre	6	2.9	1.7	2.5	1.6	2.4	1.8	4.2	1.6	3.3	1.6	.147
Post	6	3.7	1.4	3.6	.9	3.7	1.6	4.0	1.8	3.6	1.6	.946
Child Educational Uses												
Pre	21	4.5		3.9		5.3		2.8		5.5		
Post	21	4.3		4.5		4.9		3.7		3.8		
Parents' Affluence	14	7.9	2.8	6.8	2.6	8.0	2.4	7.5	4.2	9.5	2.1	.149
Mean Years of Parents' Education	16	9.0	3.4	7.9	2.6	10.0	1.6	8.1	6.5	9.9	3.0	.379

TABLE 29

Selected Parent Questionnaire Items for All Spanish-Speaking Children

(by quartiles)

		P		Pretest Questionnaire*				Posttest Questionnaire*			
		Pre	Post	Q1 N=14	Q2 N=10	Q3 N=6	Q4 N=10	Q1 N=12	Q2 N=11	Q3 N=7	Q4 N=11
How often child uses art things at home.	Once a day	ns	ns	36%	40%	50%	60%	42%	45%	57%	55%
	Several a week			36	30	33	30	42	36	43	36
	Once a week or less			7	0	17	10	17	9	0	9
	Never			21	20	0	0	0	0	0	0
	Don't know			0	0	0	0	0	0	0	0
What mother usually does with child.	Plays with him	ns	ns	50	60	50	60	75	82	71	73
	Reads to him	ns	(.05)	21	30	67	30	33	18	71	73
	Housework	ns	ns	86	80	83	100	67	82	100	73
	Watches TV	ns	ns	0	10	0	30	25	18	14	9
	Watches TV with him	ns	ns	64	80	100	80	83	73	100	82
	Reads by herself	ns	ns	0	10	0	10	33	36	14	18
How often child is read to.	Once a day	ns	ns	14	0	33	20	17	9	14	36
	Several a week			7	20	33	40	33	36	57	18
	Once a week or less			21	30	0	30	17	27	14	35
	Never			21	30	0	0	25	9	14	0
	Don't know			36	20	33	10	8	18	0	0
Do most children have to be forced to learn?	Almost all the time	ns	ns	0	10	17	10	16	28	14	0
	Most of the time			7	20	33	0	8	0	0	18
	Sometimes			57	50	33	60	50	55	86	65
	Never			29	20	0	30	25	18	0	18
Does your child have to be forced to learn?	Almost all the time		ns		**			8	9	14	0
	Most of the time							8	9	0	9
	Sometimes							50	56	71	36
	Never							33	27	74	55

ns = not statistically significant.
Probabilities in parenthesis should be interpreted with caution since they were computed on small expected cell frequencies.

Responses do not always total 100% because of some incomplete questionnaires.

**Question not asked in this questionnaire.

TABLE 29

Selected Parent Questionnaire Items for All Spanish-Speaking Children

(by quartiles)

		P		Pretest Questionnaire				Posttest Questionnaire			
		Pre	Post	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Hours child watched TV yesterday.	6 or more	ns	ns	0%	0%	0%	20%	0%	0%	14%	27%
	4 or 5			14	30	0	30	25	9	43	9
	2 or 3			50	10	50	40	25	27	43	45
	Less than 2			36	60	50	10	50	55	0	18
Does child ever watch local ETV?	Yes	ns	ns	21	30	50	60	58	100	100	91
Mother watches Sesame Street with child.	Almost always		ns		**			25	18	29	45
	Usually							0	18	14	36
	Sometimes							17	46	57	9
	Hardly ever							17	18	0	9
	No Sesame Street							42	0	0	0
Mother and child talk about Sesame Street.	Almost always		(.01)		**			17	9	29	82
	Usually							8	27	0	9
	Sometimes							17	64	72	9
	Hardly ever							17	0	0	0
	No Sesame Street							42	0	0	0
Child plays games based on Sesame Street.	Almost always		ns		**			0	0	0	18
	Usually							0	0	14	9
	Sometimes							25	64	86	56
	Hardly ever							25	36	0	0
	Don't know							8	0	0	18
	No Sesame Street							42	0	0	0
How helpful is Sesame Street for your child?	Not helpful		ns		**			0	0	0	0
	Somewhat							17	36	0	0
	Very							33	64	100	100
	Don't know							8	0	0	0
	No Sesame Street							42	0	0	0

TABLE 29

Selected Parent Questionnaire Items for All Spanish-Speaking Children

(by quartiles)

		P		Pretest Questionnaire				Posttest Questionnaire			
		Pre	Post	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Kind of TV on which child watches Sesame Street.	Black & white		ns	**				58%	64%	71%	55%
	Color							0	36	29	45
	No Sesame Street							42	0	0	0
Employment of male head of household.	35 hours a week or more	ns		64%	50%	83%	80%	**			
	10-35 hours			7	0	0	0				
	Less than 10 hours			0	30	0	0				
	Other			29	20	17	20				
Number of people living in child's home.	2	ns		7	0	17	0	**			
	3-4			14	10	33	50				
	5-6			35	50	17	20				
	7-8			22	30	33	20				
	Over 8			21	10	0	10				
Number of rooms in house.	1-2	ns		7	10	0	0	**			
	3-4			36	40	50	30				
	5-6			57	50	50	60				
	7-8			0	0	0	10				
	Over 8			0	0	0	0				

9. Rural Children

As part of our evaluation, a small group of non-migrant children from northeast California were studied in order to determine the effectiveness of Sesame Street with children living in sparsely populated regions. The 61 children involved in this side study lived in relatively isolated towns and villages in a 10-county region covering about 39,000 square miles (about seven times larger than Connecticut) with a population of 350,000 (about one-eight that of Connecticut). In fact, the two women who tested these children each spent ten days traveling throughout the area in order to complete the testings.

Most of the children were identified by the educational administrators in the local area as being disadvantaged. Parent Questionnaire data to be discussed later will reveal that while many of them were actually comparable to our total disadvantaged group (and had pretest scores to illustrate it), some of the children were clearly advantaged. In addition, these children tended to be about two months older, on the average, than the total disadvantaged group. As was true in the previous discussion of Spanish-speaking children, the small N in this side study precludes the drawing of many definitive conclusions. Bearing all these things in mind, we will now turn to the test results of the 61 rural children.

Pretest means, gains, and standard deviations are presented in Table 30, and selected graphic representations appear in Figures 9 a-e. The following observations can be made:

-- Over one-third of the children were in Q1, indicating that these rural children tended to watch Sesame Street less often than the total disadvantaged group.

TABLE 30

Pretest and Gain Scores for All Rural Children

(by Quartiles)

N = 61

Test & Subtest	Maximum Possible Score	Q_1 N=23 Pretest Mean	Q_1 Pretest SD	Q_1 Gain Mean	Q_1 Gain SD	Q_2 N=16 Pretest Mean	Q_2 Pretest SD	Q_2 Gain Mean	Q_2 Gain SD	Q_3 N=8 Pretest Mean	Q_3 Pretest SD	Q_3 Gain Mean	Q_3 Gain SD	Q_4 N=14 Pretest Mean	Q_4 Pretest SD	Q_4 Gain Mean	Q_4 Gain SD
Grand Total	203	75.22	26.33	24.13	8.10	78.19	15.32	39.69	18.51	102.13	21.28	43.75	21.18	105.43	29.02	51.00	20.66
Body Parts Total	32	17.22	6.97	5.87	3.99	19.81	6.25	7.50	5.99	23.38	4.69	3.25	2.38	24.29	4.68	5.00	3.59
Pointing to Body Parts	5	3.30	1.49	0.61	1.31	3.69	1.14	0.69	1.20	4.13	0.83	0.25	1.04	4.07	1.07	0.64	0.74
Naming Body Parts	15	8.57	2.83	1.70	1.66	9.44	3.60	3.00	3.72	11.13	1.81	0.50	1.60	11.29	2.09	1.57	1.28
Function of Body Parts (Point)	8	3.78	2.63	1.91	2.21	4.38	2.50	2.56	2.45	5.50	1.51	1.25	1.04	6.36	2.24	1.36	1.98
Function of Body Parts (Verbal)	4	1.57	1.56	1.65	1.40	2.31	1.20	1.25	1.18	2.63	1.19	1.25	1.04	2.57	1.34	1.43	1.34
Letters Total	58	13.78	6.99	3.48	3.96	12.88	3.22	9.25	9.94	17.13	4.19	15.50	11.94	19.36	10.94	18.29	8.59
Recognizing Letters	8	1.83	1.53	0.65	2.74	2.38	1.45	1.56	2.39	3.13	1.36	2.00	2.73	3.29	2.09	2.36	2.50
Naming Capital Letters	16	1.78	3.38	0.43	1.59	0.56	0.89	4.69	5.45	1.13	0.99	8.50	5.68	3.07	4.27	9.43	3.55
Naming Lower Case Letters	8	0.78	1.65	0.09	1.38	0.44	0.73	1.25	2.49	0.63	0.74	3.25	3.01	1.00	2.08	3.36	2.31
Matching Letters in Words	4	2.83	1.34	0.91	1.12	3.13	0.96	0.38	0.81	3.75	0.46	0.25	0.46	3.79	0.43	0.00	0.55
Recognizing Letters in Words	4	1.70	1.33	-0.09	1.56	1.56	0.89	0.38	1.63	1.63	1.19	0.63	1.19	1.43	1.16	1.57	1.16
Initial Sounds	4	0.74	0.96	0.17	1.34	0.81	0.43	-0.38	0.72	1.25	0.71	-0.50	0.93	1.14	0.77	-0.07	1.00
Reading Words	6	0.00	0.00	0.13	0.63	0.00	0.00	0.00	0.00	0.00	0.00	0.13	0.35	0.29	1.07	0.29	0.47
Forms Total	20	7.74	3.15	3.87	2.40	8.81	2.64	3.63	3.05	12.13	3.76	4.00	3.59	11.79	2.99	5.14	3.30
Recognizing Forms	4	1.74	1.29	0.74	1.81	2.25	1.24	0.13	1.67	2.63	1.30	0.63	2.13	2.71	1.20	0.79	1.81
Naming Forms	4	0.39	0.58	1.13	0.92	0.63	0.62	1.31	0.79	1.50	1.41	1.25	1.04	1.29	1.20	2.00	1.11
Numbers Total	54	16.00	8.43	6.22	4.33	15.94	6.07	12.56	8.32	24.38	8.58	14.38	5.10	26.64	9.25	14.00	7.51
Recognizing Numbers	6	1.70	1.40	0.22	1.44	1.69	1.35	1.56	1.86	2.63	1.51	1.50	1.20	2.79	1 58	2.36	1.60
Naming Numbers	15	1.22	3.27	0.17	1.03	0.56	1.09	3.50	3.50	2.50	2.39	5.38	4.34	3.21	3.96	6.29	4.01
Numerosity	6	3.17	1.11	1.48	1.12	3.81	1.05	1.00	1.03	4.13	2.03	1.25	1.28	4.79	1.19	0.29	1.33
Counting	9	4.17	2.27	1.57	1.20	3.50	2.37	3.25	1.53	6.25	3.06	0.75	1.67	6.57	1.16	1.64	1.39
Addition and Subtraction	7	1.26	1.14	1.26	1.60	1.13	1.31	1.75	1.73	2.25	1.04	1.88	1.36	2.57	1.83	1.43	2.06
Matching Subtest	11	7.70	2.44	2.00	1.91	7.38	2.55	2.38	2.36	9.75	1.04	0.88	0.99	9.64	1.08	0.71	0.83
Relational Terms Total	17	9.35	3.08	1.48	2.31	9.63	2.00	1.69	1.89	11.00	2.07	1.63	1.41	10.43	2.41	2.29	2.20
Amount Relationships	9	4.78	1.70	0.52	1.68	4.88	1.20	0.50	1.37	5.38	1.41	0.63	1.69	4.86	1.51	1.07	1.77
Size Relationships	2	1.48	0.67	0.26	0.69	1.44	0.51	0.31	0.60	1.75	0.46	0.25	0.46	1.57	0.51	0.14	0.53
Position Relationships	5	2.74	1.25	0.61	1.44	2.94	1.00	0.69	1.01	3.25	1.49	0.63	1.06	3.50	0.85	0.79	1.12
Sorting Total	6	1.83	1.30	0.96	1.43	2.44	1.26	1.19	1.42	3.50	1.41	1.13	1.96	2.86	1.23	1.57	1.22
Classification Total	24	10.39	5.06	2.91	2.97	10.56	2.53	3.94	4.77	14.13	3.56	6.50	3.07	12.79	4.08	6.64	4.33
Classification by Size	2	0.87	0.81	0.17	0.98	1.13	0.62	0.19	0.66	1.50	0.76	0.25	0.71	1.14	0.66	0.71	0.83
Classification by Form	6	1.87	1.49	1.00	1.24	2.13	1.20	1.00	1.51	3.13	1.55	1.50	1.07	2.64	1.34	1.86	1.83
Classification by Number	6	1.87	1.46	0.61	1.31	2.25	1.06	0.63	1.89	3.00	0.76	1.88	0.99	2.50	1.34	1.50	0.76
Classification by Function	9	5.22	2.09	1.17	1.70	4.69	1.30	2.06	1.88	6.00	2.00	2.63	1.85	6.14	1.66	2.14	2.11
Puzzles Total	5	2.26	1.51	0.83	1.80	2.38	1.20	0.88	1.41	2.88	1.13	1.13	1.36	2.71	1.44	1.00	1.04
Peabody Raw Score (Pretest only)	80	40.65	11.39			35.75	10.48			39.25	7.27			50.64	8.56		
Peabody Mental Age (Months)	--	50.00	15.20			48.31	11.96			61.13	13.02			64.57	15.35		
Hidden Triangles Total (Posttest)	10	4.26	1.14			4.31	1.25			4.13	.64			4.57	1.16		
Which Comes First Total (Posttest)	12	5.09	2.63			6.13	2.90			6.75	3.15			7.93	2.23		

-- Grand Total pretest means in Q1 and Q2 were lower than those observed for the total group, whereas pretest means in Q3 and Q4 were somewhat higher. Nonetheless, gains in all quartiles were above the average gains for the total group, and gains were again monotonically associated with increased viewing.

-- Specific pretest scores and their gains were very similar to those discussed for other groups of children. Q4 children usually gained the most, even though their pretest scores were often highest. Variations did occur, specifically in Numbers where the greatest difference in gains occurred between Q1 and Q2 and where Q3 and Q4 gains were about the same. However, in most subtests of Letters, Forms, and Classification, gains were associated positively with viewing.

-- PPVT scores of these children show that the mean mental age of Q3 and Q4 children was in excess of 5 years whereas the mean for Q1 and Q2 were each about 4 years. The mental ages of the rural children were somewhat higher than those of most other groups in the evaluation; however, pretest means on the total test were often somewhat lower. It appears that many of the rural children were indeed disadvantaged as far as the specific goals of Sesame Street are concerned.

Tables 31 and 32 present relevant Parent Questionnaire data. They show that:

-- Parent Affluence was significantly related to amount of viewing ($p<.01$), with Q4 children coming from the most affluent homes.

-- Mean years of education were significantly related to viewing ($p<.01$), again Q4 parents having the most education.

-- Mothers watched TV with their children more often in Q1 and Q2 (<05) than in Q3 and Q4, and ETV viewing was related to Sesame Street viewing.

In summary, the rural, non-migrant children, including those who scored low at pretest, gained well with high amounts of viewing. Their disadvantage was apparently, in part, a function of their geographic isolation. When they watched Sesame Street they gained dramatically. Presumably, Sesame Street served the same role as bush wireless and correspondence schools do for outback Australian children -- reducing their intellectual isolation.

FIGURE 9a

Pretest and Gain on Total Test Score for All Rural Children
(by viewing quartiles)
N=61

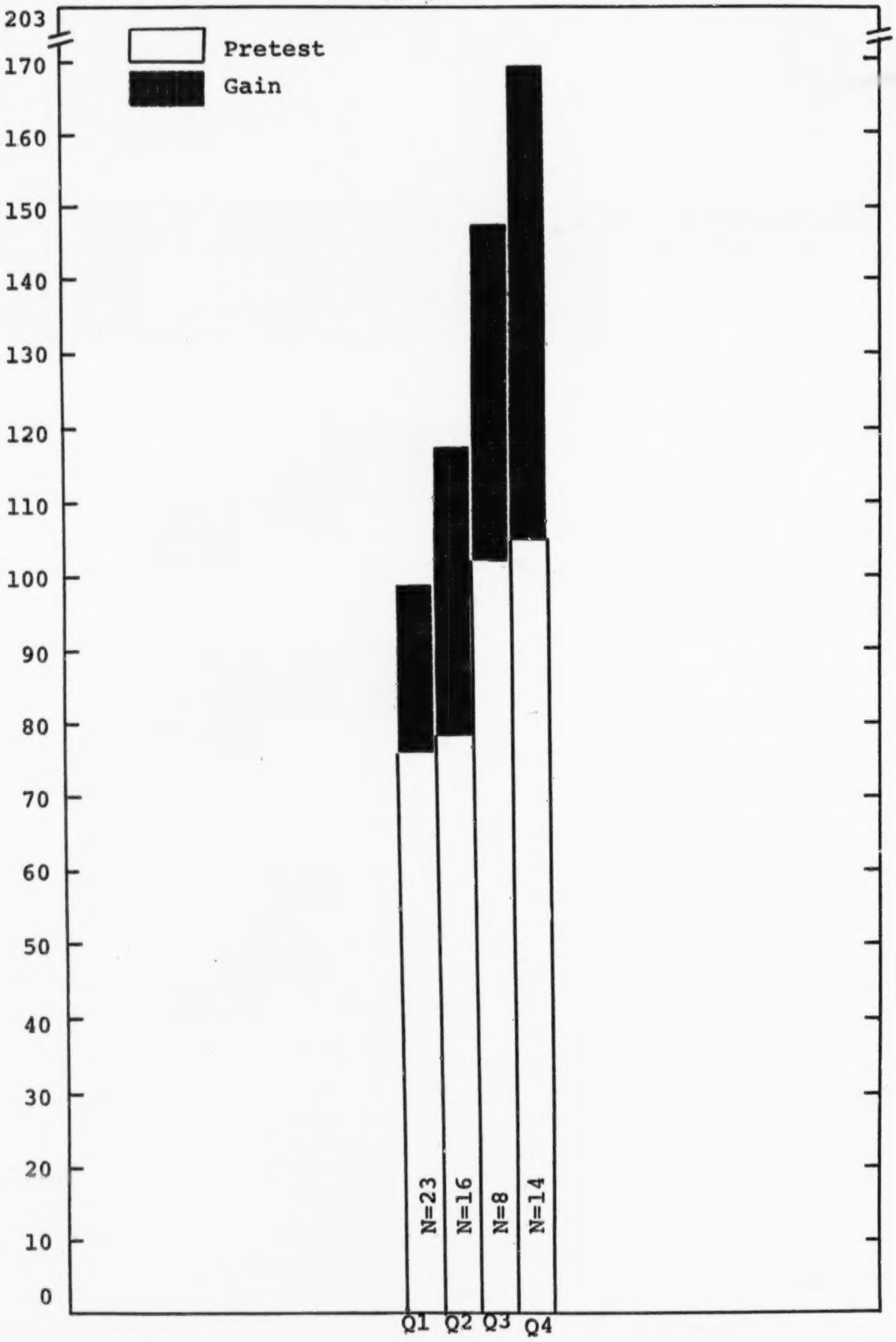


FIGURE 9b

Selected Pretest and Gain Scores for All Rural Children

(by viewing quartiles)   Q1=23   Q2=16   Q3=8   Q4=14

Dashed lines beneath test titles indicate maximum possible scores.

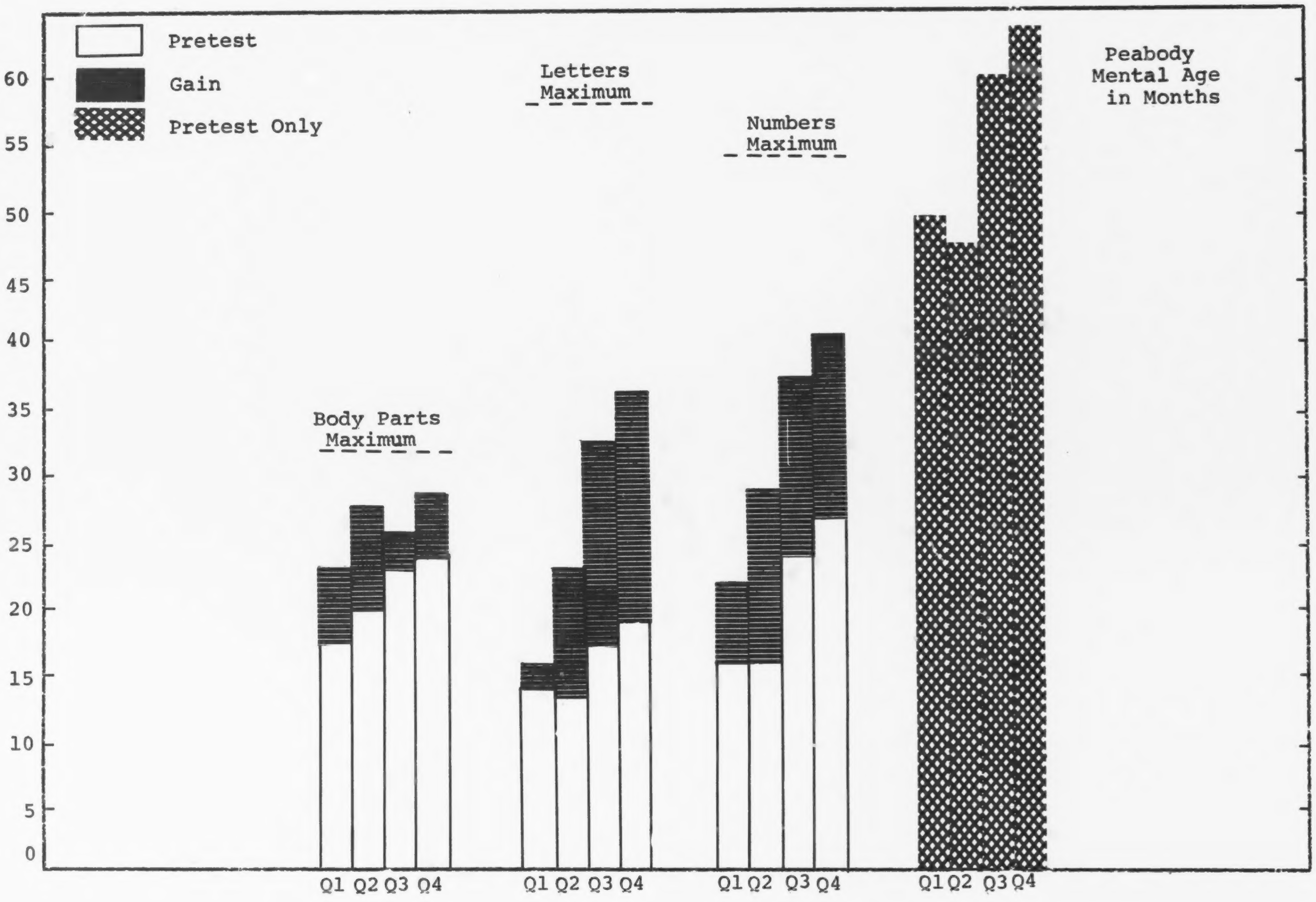


FIGURE 9c

Selected Pretest and Gain Scores for All Rural Children

(by viewing quartiles) Q1=23 Q2=16 Q3=8 Q4=14

Dashed lines beneath test titles indicate maximum possible scores.

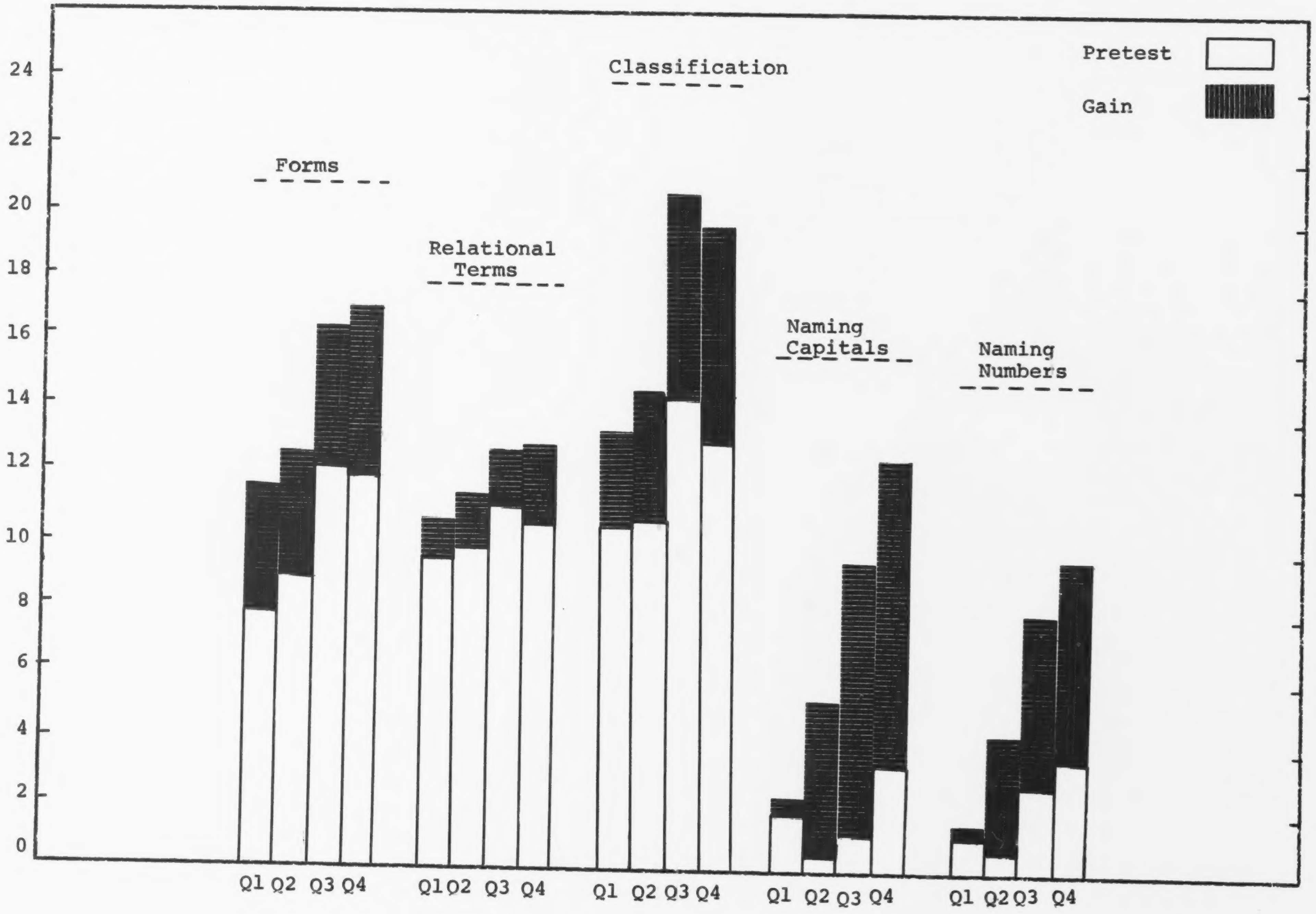


FIGURE 9d

Selected Pretest and Gain Scores for All Rural Children

(by viewing quartiles) Q1=23 Q2=16 Q3=8 Q4=14

Dashed lines beneath test titles indicate maximum possible scores.

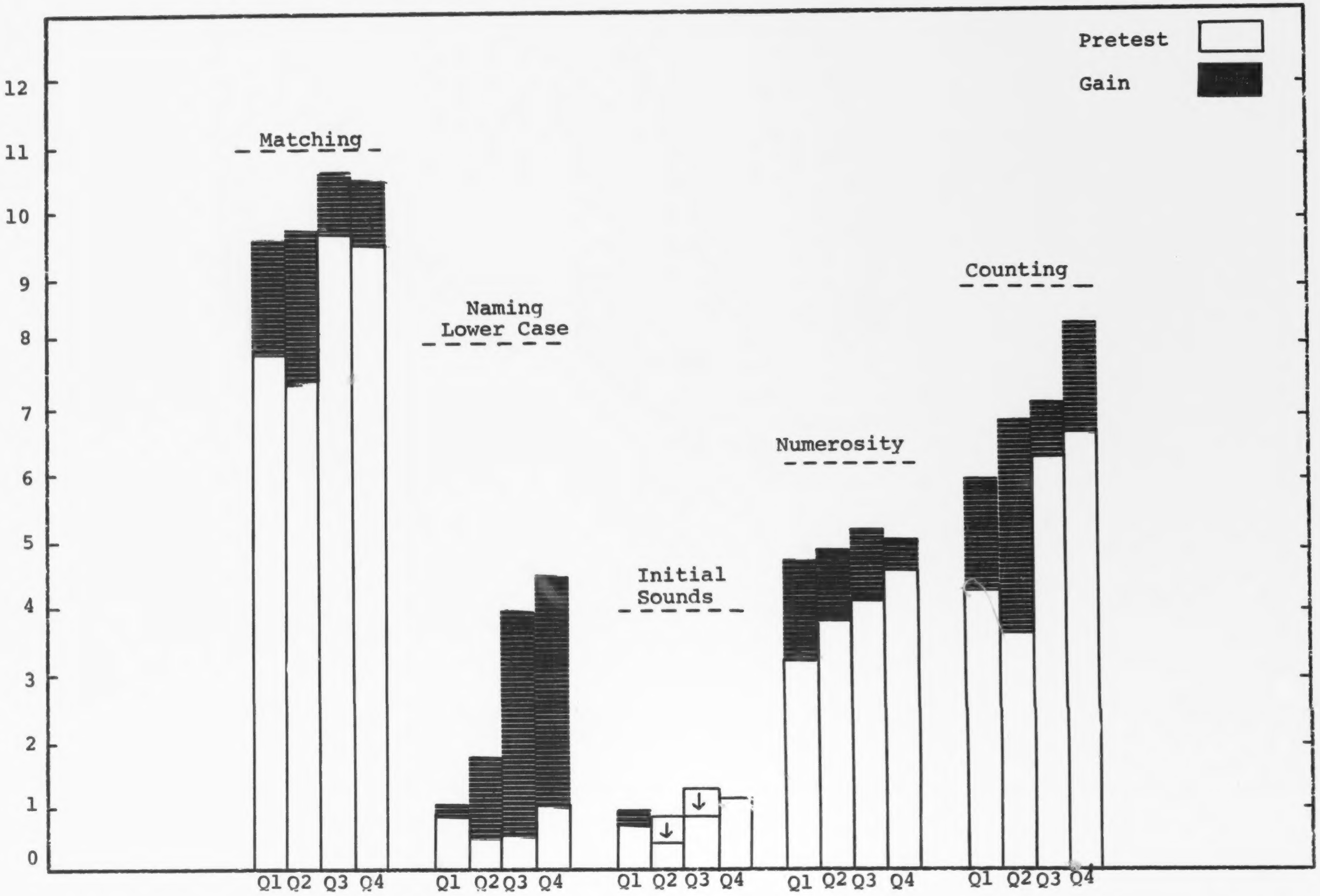


FIGURE 9e

Selected Pretest and Gain Scores for All Rural Children

(by viewing quartiles) Q1=23 Q2=16 Q3=8 Q4=14

Dashed lines beneath test titles indicate maximum possible scores.

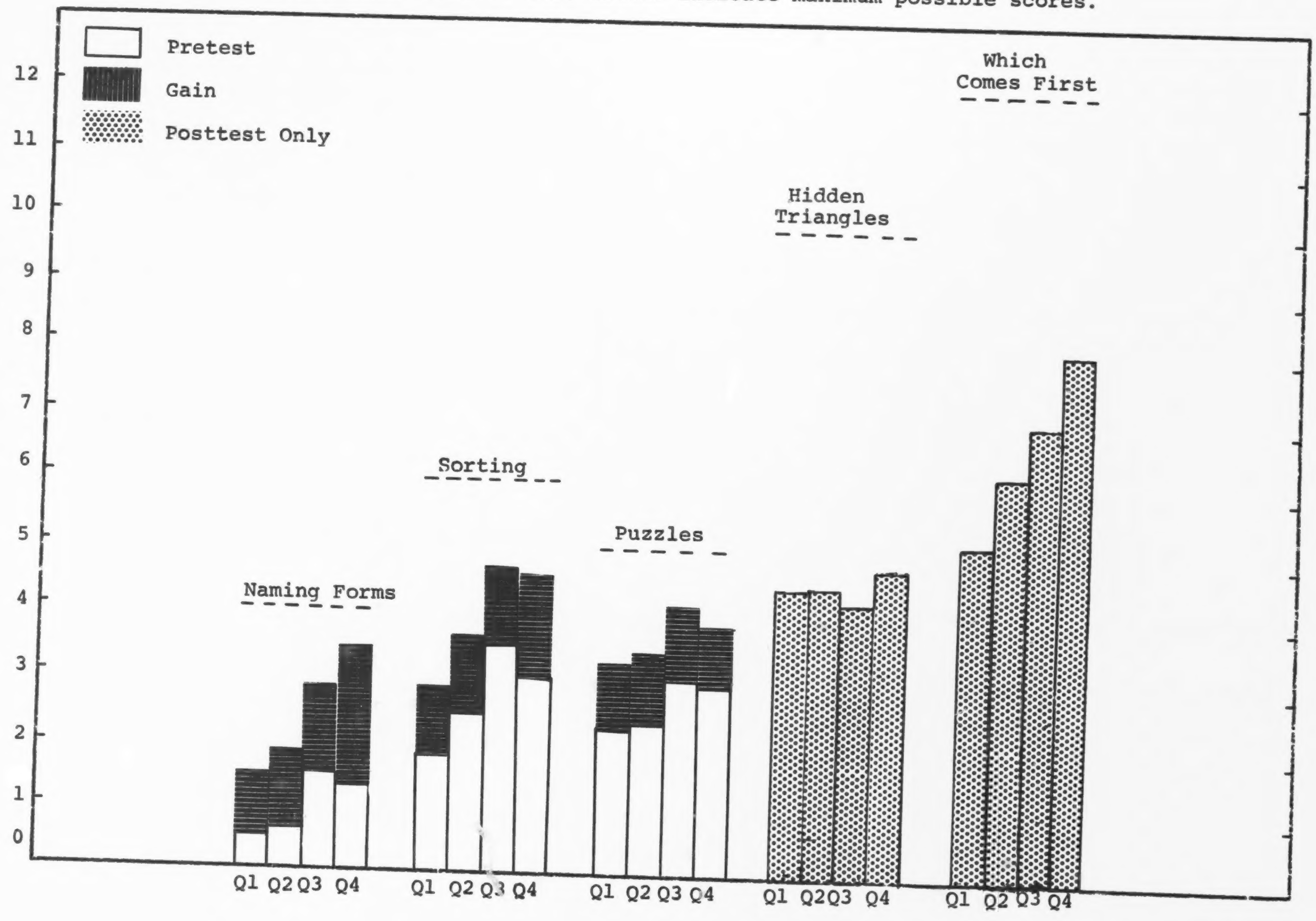


TABLE 31

Parent Questionnaire Scales for All Rural Children

(by quartiles)

		Total N= 53		Q1 N= 17		Q2 N=14		Q3 N= 8		Q4 N= 14		P
	Maximum Possible Score	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	
Parents'Expectation												
Pre	50	38.4	3.7	33.9	12.7	40.1	4.9	38.5	6.0	42.1	3.5	.050
Post	50	38.7	6.2	35.6	88.6	40.3	4.7	39.6	4.6	40.4	3.5	.098
Child Affluence												
Pre	6	3.7	1.2	3.5	1.4	3.7	1.4	3.5	1.2	3.9	.83	.753
Post	6	3.7	1.2	3.5	1.3	3.5	1.0	3.5	1.6	4.1	.92	.518
Child Educational Uses												
Pre	21	3.0		3.2		2.6		2.9		3.3		
Post	21	2.4		2.7		2.0		2.0		2.7		
Parents' Affluence	14	10.2	2.7	8.1	2.7	10.5	2.1	10.8	2.9	12.0	1.2	.000
Mean Years of Parents' Education	16	12.1	2.0	11.0	2.2	11.8	1.5	12.9	2.0	13.3	1.6	.007

TABLE 32

Selected Parent Questionnaire Items for All Rural Children

(by quartiles)

		P		Pretest Questionnaire*				Posttest Questionnaire*			
		Pre	Post	Q1 N=22	Q2 N=16	Q3 N=8	Q4 N=14	Q1 N=18	Q2 N=14	Q3 N=8	Q4 N=14
How often child uses art things at home.	Once a day	ns	ns	32%	38%	13%	50%	33%	36%	25%	42%
	Several a week			41	56	75	50	39	43	38	50
	Once a week or less			18	61	0	0	22	21	37	7
	Never			5	0	0	0	0	0	0	0
	Don't know			0	0	0	0	6	0	0	0
What mother usually does with child.	Plays with him	ns	ns	73	69	50	71	67	79	63	71
	Reads to him	ns	ns	64	69	63	71	78	79	75	100
	Housework	ns	ns	73	88	75	79	94	93	100	93
	Watches TV	ns	ns	23	25	25	14	17	29	50	36
	Watches TV with him	(.05)	ns	82	75	25	57	72	100	63	79
	Reads by herself	ns	ns	23	31	13	21	39	64	38	29
How often child is read to.	Once a day	ns	ns	32	38	0	50	22	21	36	57
	Several a week			32	31	75	43	44	29	25	43
	Once a week or less			18	25	13	7	17	50	28	0
	Never			9	0	0	0	6	0	0	0
	Don't know			9	6	13	0	11	0	0	0
Do most children have to be forced to learn?	Almost all the time	ns	ns	5	0	13	0	0	0	0	0
	Most of the time			5	6	13	0	0	0	13	0
	Sometimes			77	50	50	86	83	57	50	64
	Never			14	44	25	14	17	43	38	36
Does your child have to be forced to learn?	Almost all the time		ns		**			0	0	13	0
	Most of the time							0	0	0	0
	Sometimes							72	43	50	64
	Never							28	57	38	36

ns = not statistically significant.

Probabilities in parenthesis should be interpreted with caution since they were computed on small expected cell frequencies.

* Responses do not always total 100% because of some incomplete questionnaires.

** Question not asked in this questionnaire.

TABLE 32

Selected Parent Questionnaire Items for All Rural Children

(by quartiles)

		P		Pretest Questionnaire				Posttest Questionnaire			
		Pre	Post	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Hours child watched TV yesterday.	6 or more	ns	(.05)	5%	0%	0%	14%	6%	0%	0%	0%
	4 or 5			5	19	13	14	0	7	0	14
	2 or 3			45	31	25	43	28	71	100	50
	Less than 2			36	50	38	21	67	21	0	36
Does child ever watch local ETV?	Yes	(.05)	(.001)	18	25	13	64	33	100	100	100
Mother watches Sesame Street with child.	Almost always		ns	**				0	29	0	21
	Usually							11	7	38	21
	Sometimes							22	36	38	43
	Hardly ever							11	29	25	14
	No Sesame Street							56	0	0	0
Mother and child talk about Sesame Street.	Almost always		ns	**				6	21	25	43
	Usually							11	14	25	36
	Sometimes							6	50	38	21
	Hardly ever							22	14	13	0
	No Sesame Street							56	0	0	0
Child plays games based on Sesame Street.	Almost always		ns	**				0	0	0	21
	Usually							0	14	0	0
	Sometimes							17	29	63	50
	Hardly ever							16	36	13	29
	Don't know							11	21	25	0
	No Sesame Street							56	0	0	0
How helpful is Sesame Street for your child?	Not helpful		ns	**				0	0	0	0
	Somewhat							17	29	25	14
	Very							6	57	63	86
	Don't know							22	14	13	0
	No Sesame Street							56	0	0	0

TABLE 32

Selected Parent Questionnaire Items for All Rural Children

(by quartiles)

		P		Pretest Questionnaire				Posttest Questionnaire			
		Pre	Post	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Kind of TV on which child watches Sesame Street.	Black & white		ns	**				44%	93%	75%	86%
	Color							0	0	25	14
	No Sesame Street							56	7	0	0
Employment of male head of household.	35 hours a week or more	ns		59%	63%	88%	93%	**			
	10-35 hours			9	6	0	7				
	Less than 10 hours			0	0	0	0				
	Other			32	31	13	0				
Number of people living in child's home.	2	ns		14	6	0	7	**			
	3-4			18	13	25	43				
	5-6			45	56	63	50				
	7-8			18	25	13	0				
	Over 8			5	0	0	0				
Number of rooms in house.	1-2	ns		5	0	13	0	**			
	3-4			27	50	13	36				
	5-6			55	44	75	50				
	7-8			5	6	0	14				
	Over 8			9	0	0	0				

10. Content Analysis of Sesame Street.

In order to provide an independent description of the content of Sesame Street, a content analysis of each of the 130 hours was conducted. Every 30 seconds of every show, a note was made as to the specific goal being taught and the specific television technique being used to teach the goal. (See Appendix G.) These analyses made possible a description of the actual output of the show. A total of 14,759 such dual notations were made.

The content analysis was performed by ETS staff members who were completely familiar with the goals of Sesame Street. Their judgments as to the goal being taught were made independently of the intentions of the CTW writers and producers. Whereas an entire segment of animation may have been intended to teach the labeling of a letter, the 30-second technique might reveal that only half of the segment dealt with the goal, and the other half actually taught a different goal or was primarily for entertainment. The judgments of the ETS staff members were tested for inter-judgmental reliability. The judgments coincided as to goal approximately 95 percent of the time and coincided as to TV technique about 85 percent of the time.

Table 33 reveals the number of times and the percentage of total time spent on each of the goals separately and then in combination. Thus, it may be seen that the goals relating to letters were on the screen 13.9 percent of the time, numbers 9.9 percent of the time, self 7.3 percent of the time, and relational concepts 4.9 percent of the time. It may also be seen that entertainment accounted for 19.9 percent of the time (about 12 minutes in each show).

Entertainment in and of itself did figure quite heavily in the total show. It should be pointed out that introductory and ending segments of the show (about three or four minutes) were usually categorized as entertainment. A number of the songs featured in the show also were so categorized. Often too, a segment would begin or end in ways quite unrelated to an educational goal -- for example, Bert and Ernie might be having one of their friendly arguments or Big Bird might be passing the time of day with Bob. Of course, the show was meant to be entertaining, and the intention here is merely to describe the nature of the show. Educational goals other than those specified in the CTW goals statement took up 4.9 percent of the time. These included such activities as teaching children vocabulary such as the names of the days of the week. Again, this was expected from the outset inasmuch as the stated goals were not meant to be all-encompassing.

The specific CTW goals receiving most attention (more than 1.5 percent or one minute of each show on the average) were naming letters, initial sounds, recitation of numbers, problem sensitivity, evaluating solutions, body parts, expressing emotions, machines, and plants and animals. Table 34 takes those goals treated more than 1 percent of the total time and indicates the techniques used to present each goal listed. Animation was used heavily to teach naming letters, initial sounds, recitation of the alphabet, naming numbers, recitation of numbers, and geometric forms. Its use elsewhere was very limited. If animation is one of the most effective of TV techniques for attention holding, then it would seem reasonable to spread its use across more goals in the future.

The Muppets were heavily used to present relational concepts (size and position), problem sensitivity, inferring antecedent events, body functions and parts, expressing emotions, roles and functions of family members, cooperation, and entertainment. Clearly, then, their role was central, cutting across some of the higher cognitive processes and including areas that would be expected to give "soul" to the show -- emotions, family, cooperation.

People on set or on film were used most in connection with the recitation of the alphabet, counting, geometric forms, auditory discrimination, relational concepts, problem sensitivity, inferring antecedent events, generating and evaluating explanations and solutions, body parts, expressing emotions, cooperation, plants and animals, entertainment, and different educational goals. Without doubt people on set or on film were a central technique to achieve Sesame Street's educational goals.

Song, a traditional means of teaching preschool children, was used extensively on Sesame Street. The recitation of the alphabet, body parts, roles and functions of family members, and entertainment were the areas where song was used most often.

This analysis becomes more useful as we look at the manner in which children reacted to the various television techniques. The evidence on that point will be presented in the following part of this section.

TABLE 33

THE PERCENT OF TIME EACH GOAL WAS OBSERVED IN 130 SHOWS

GOAL	NUMBER OF TIMES GOAL OBSERVED	PERCENT OF TIME GOAL OBSERVED	TOTAL FOR COMBINED GOALS (IN PERCENT)
Letters (General)	113	.8	13.9
Recognizing Letters	62	.4	
Naming Letters	725	4.9	
Initial Sounds	834	5.5	
Recitation of Alphabet	344	2.3	
Numbers (General)	55	.4	9.9
Reciting Numbers	5	.03	
Naming Numbers	288	1.9	
Counting	237	1.6	
Numerosity	86	.6	
Recitation of Numbers	800	5.4	
Geometric Forms (General)	169	1.1	2.5
Recognizing Forms	135	.9	
Naming Forms	74	.5	
Perceptual Discrimination	15	.1	4.6
Visual Discrimination	106	.7	
Embedded Figures	76	.5	
Block & Figure Construction	61	.4	
Conceptual Synthesis	90	.6	
Auditory Discrimination	147	1.0	
Rhyming	70	.5	
Selective Attention	122	.8	
Relational Concepts	17	.1	4.9
Same-different	43	.3	
Amount	85	.6	
Size	225	1.5	
Position	221	1.5	
Distance	57	.4	
Temporal	70	.5	
Sorting	27	.2	1.9
By size	39	.3	
form	76	.5	
function	75	.5	
class	56	.4	
number	5	.03	
Classification	4	.02	.7
By size	10	.1	
form	13	.1	
function	43	.3	
class	21	.1	
number	0	0	

TABLE 33

GOAL	NUMBER OF TIMES GOAL OBSERVED	PERCENT OF TIME GOAL OBSERVED	TOTAL FOR COMBINED GOALS (IN PERCENT)
Problem Sensitivity	466	3.1	3.1
Inferences & Causality	4	.02	2.6
Antecedents	137	.9	
Consequences	150	1.0	
Ordering	106	.7	
Evaluating Solutions	432	2.9	2.9
Self	4	.02	7.3
Body Parts	597	4.0	
Coordinated Movement	40	.3	
Labelling Emotions	45	.3	
Expressing Emotions	373	2.5	
Self-esteem	36	.2	
Social Units	3	.02	3.1
Roles & Functions	32	.2	
Family Members	219	1.5	
Community Members	107	.7	
Social Groups	102	.7	
Social Interactions	105	.7	2.7
Differing Perspectives	90	.6	
Cooperation	205	1.4	
Man-made Environment	59	.4	2.5
Machines	258	1.7	
Buildings	58	.4	
Natural Environment	8	.1	10.9
Land & Water	139	.9	
City & Country	41	.3	
Plants & Animals	1325	8.9	
Natural Processes	100	.7	
Entertainment	2964	19.9	
Limbo	211	1.4	
Different Educational Goal	732	4.9	
Total	14,759		

TABLE 34

TREATMENT COMPOSITION OF SOME GOALS *

GOAL	PERCENTAGE	TREATMENT
Naming Letters	51.0	Animation
	17.7	Muppets
	16.5	People
	6.3	People & Muppets
	8.0	Other**
Initial Sounds	71.4	Animation
	10.0	People & Muppets
	7.2	People
	5.7	Muppets
	5.3	Other
Recitation of Alphabet	25.8	Animation
	25.2	People
	18.6	People singing
	17.1	Muppets
	7.5	Muppets singing
	5.3	Other
Naming Numbers	65.9	Animation
	12.5	Film with People
	5.9	People
	14.9	Other
Counting	34.5	Film with People
	15.1	Animation
	12.6	Film
	8.4	Muppets
	7.1	People
	21.3	Other
Recitation of Numbers	56.8	Animation
	12.1	Film with People
	7.3	People
	7.3	Muppets
	15.6	Other

* Only goals treated more than 1% of the total time are included.

** Includes all treatments which comprised less than 5% of each goal.

TABLE 34

GOAL	PERCENTAGE	TREATMENT
Geometric Forms (General)	26.6	People
	26.6	Animation
	23.6	Film
	12.4	Film with People
	10.1	Other
Recognizing Forms	68.1	Film
	14.0	People
	8.1	Animation
	9.4	Other
Auditory Discrimination	29.9	People
	19.9	Film
	16.6	People & Muppets
	14.4	Film, People
	10.3	Other
Relational Concepts (Size)	56.8	Film with people
	19.1	Muppets
	11.1	People
	10.2	People & Muppets
	2.5	Other
Relational Concepts (Position)	43.8	Film with People
	31.6	Muppets
	10.4	People & Muppets
	6.7	People
	7.1	Other
Problem Sensitivity	73.1	People
	11.1	People & Muppets
	10.7	Muppets
	4.8	Other
Inferring Antecedent Events	35.3	Muppets
	34.6	People
	19.3	People & Muppets
	10.4	Other
Generation and Evaluating Explanations & Solutions	80.7	People
	9.2	Muppets
	9.2	People & Muppets
	.6	Other
Body parts and functions	27.1	Film with People
	21.6	Muppets
	11.8	Film with People singing
	10.3	People & Muppets
	7.8	People singing
	7.2	People
	6.5	Animation
	7.0	Other

TABLE 34

GOAL	PERCENTAGE	TREATMENT
Expressing Emotions	46.1	Muppets
	22.2	People & Muppets
	9.6	People singing
	6.4	People
	15.3	Other
Roles & Functions of Family Members	32.8	Muppets
	24.2	Muppets singing
	10.9	People & Muppets
	8.2	Pictures
	7.3	People & Muppets
	6.8	Animation
	9.4	Other
Cooperation	47.3	Muppets
	25.3	People & Muppets
	16.5	People
	10.3	Other
Machines & Tools	66.2	Film
	13.9	Film with People
	5.8	People
	5.4	People & Muppets
	7.9	Other
Plants & Animals	43.6	People & Animals
	27.7	Film with Animals
	27.5	Other
Entertainment	28.2	Muppets
	20.1	People
	14.1	People & Muppets
	9.7	Animation
	8.0	Film with People singing
	6.8	Muppets singing
	12.1	Other
Different Educational Goals	23.0	People
	21.9	People singing
	13.3	Pictures
	9.5	Film with People
	7.1	Animation
	6.0	Song-Muppets
	5.6	People & Muppets
	12.8	Other

11. Observations.

In order to learn about the children's reactions to the various characters and production techniques used frequently on *Sesame Street*, observers were instructed to observe children watching selected segments of the production and to record the visual, verbal, and motor behaviors that occurred in relation to the segments. The behaviors were then rated on appropriate three-point scales. The visual scale, for example, ranged from 1 (Child watched very little or none of segment) to 3 (Child watched most or all of segment). The higher the score on any scale, the greater the amount of described behavior. The *Sesame Street* Observation Record can be found in Appendix F.

For each child observed, four such records were completed during a given observation, representing four different segments of the same show. A given child was observed either during the first 20 minutes or the last 20 minutes of the show. The segments to be observed were chosen by the ETS project staff and were standard across sites. On a given day, therefore, all children observed were watched during four of eight predetermined segments. The segments varied in length from several seconds to five minutes and were chosen with an eye to covering all of the major characters, activities, and production techniques used on *Sesame Street*. Children viewing at home were observed once a week. Children viewing in classrooms were observed every other week, and then on a rotating basis, so that in fact each child in a classroom was seen about every six weeks.

Sixty-nine characters and combinations of characters were isolated for scrutiny. The number of observation records collected in which one or another of the 69 characters figured ranged from 0 (for several rarely occurring combinations) to 554. Table 35 gives the averaged responses of all children to the characters for whom there were 100 or more records. The data in Tables 36, 37, and 38 are broken down by age, sex, and social class of the viewing child.

A glance at Table 35 indicates that the children watched the show attentively. There was a great deal more visual response than either verbal or motor behavior, an almost obvious conclusion since television is a visual medium. More attention is given here to the visual response categories than to the verbal and motor, partly because the relationship of the visual reponses to the children's interest in the show is more direct. Moreover, verbal and motor behavior are more directly related to specific qualities of the segment of the show under scrutiny than is visual behavior (music, for instance, invites motor response).

On the three-point scale, visual scores for all characters were greater than 2. All of the following descriptions are based on very small differences, ranging from 2.48 to 2.78. For all children, the greatest degree of visual interest was accorded Ernie (rating of 2.78), Gordon appearing with the Muppets (2.76), Susan and Big Bird appearing together (2.74), and the various visiting stars (2.73). Gordon, in combination with Oscar and with children, attracted the least visual response of those characters and combinations for which there were sufficient viewing records.

Table 36 shows age differences in the visual responses of the children to certain of the characters. For example, Bob was watched most frequently by 3-year-olds (a visual score of 2.70), slightly less by 4-year-olds (2.62), and least by 5-year-olds (2.27). In fact, 5-year-olds tended to watch least those segments in which Bob appeared alone or in combination with other characters. Other characters whose appeal seemed to diminish with the age of the viewer were Buddy and Jim, and Kermit appearing with various muppets. Susan, on the other hand, seemed to appeal to older viewers more than younger ones. It should be noted that the 5-year-olds represented by the viewing records were a smaller group numerically, that their viewing behavior was more extreme than that of any other age groups, and that the score differences were very small.

Girls tended to watch more of each segment observed than boys (Table 37). For almost all of the characters observed (also for combinations of characters and production techniques), girls' visual scores were somewhat higher than boys'. Only segments involving the muppets and segments in which children appeared on the set seemed to interest boys visually more than girls. Some minor social class differences were also evident. Lower class children showed somewhat more visual behavior. (Table 38).

The 69 characters were grouped to represent general categories of characters: Puppets, for one; people, for another; animals, for a third (Tables 39, 40, 41, and 42). Ratings were then obtained for eight categories representing the three major groupings and the most frequent combinations of those. Ratings were also obtained for eight categories of production techniques.

Overall, the children exhibited somewhat less visual interest in segments in which animals were shown either alone or in combination with people. On the other hand, when animals appeared in segments with muppets, the visual scores were highest for the total group. The muppets appearing alone fared next best. With respect to production techniques, songs were accorded the highest visual and motor responses among the entire group of children observed. Animation was also well received. Books and films were least compelling, visually, verbally, and physically. Segments combining muppets with either people or animals were accorded the lowest verbal scores, perhaps because the children were too rapt to speak, or because the muppets' behavior did not call for verbal response.

Five-year-olds watched segments in which people, muppets, and animals appeared a bit more than did 3- and 4-year olds. Otherwise, 5-year-olds tended to pay somewhat less visual attention than younger children. They did, however, talk more in relation to all of the various combinations of characters than did younger children. The younger children were particularly reactive in all response categories when muppets and animals appeared together.

Among the production techniques studied, all but two seemed to show a tapering off in terms of holding children's visual attention as age of the child increased. Only segments in which songs were prominent seemed equally attractive to children of all ages. Films with songs, on the other hand, which were visually very attractive to the youngest children (visual score of 2.73) were slightly less attractive to 4-year-olds (2.58), and elicited relatively little visual attention from 5-year-olds (2.14). Again, the older children showed more verbal response to most segments, particularly those involving music. Among 3- and 4-year olds, segments combining songs with a variety of visual materials elicited the most verbal reaction.

In all categories of response (visual, verbal, and motor) broken down by social class, lower class children showed more relevant overt behavior than middle class children. That is, the lower class children watched more, talked more, and moved more in response to the show. The differences were most notable in verbal and motor behavior, and in the children's responses to segments in which animals appeared. To all of the various production techniques, too, lower class children responded more than middle class children. The differences, although small, were greatest with respect to films and to films in which songs were prominent.

The observation records yielded a great deal of information on children's viewing behavior, and its extent is such that it has not been done justice here. Overall, the children in the sample attended to the selected segments a great deal. No visual score in any breakdown was lower than 2.00, meaning that the children were watching at least some of every segment observed. There was considerably less relevant talking and moving; the verbal and motor responses seem to have been related more to the nature of specific segments and to the ages of the children than was visual behavior. Clearly, some characters and some sorts of presentation were more appealing to some groups of children than to others. The data deserve careful scrutiny by anyone interested in the use of television for instructional purposes among small children.

TABLE 35

Viewing Scores for Selected Characters (N > 100 Observations) Total Group*

	VISUAL			VERBAL			MOTOR		
	N	Mean	SD	N	Mean	SD	N	Mean	SD
Bob	148	2.61	0.70	149	1.65	0.73	149	1.39	0.59
Susan	236	2.67	0.67	235	1.63	0.74	233	1.54	0.72
Visiting Star	206	2.73	0.59	205	2.00	0.78	204	1.42	0.65
Buddy & Jim	353	2.56	0.76	351	1.55	0.71	352	1.27	0.54
Ernie	150	2.78	0.59	149	1.55	0.66	148	1.31	0.60
Bert & Ernie	832	2.66	0.67	829	1.47	0.62	828	1.28	0.55
Muppets	554	2.68	0.66	548	1.55	0.70	549	1.39	0.63
Children	549	2.67	0.65	549	1.63	0.71	549	1.37	0.62
Gordon & Oscar	216	2.49	0.75	215	1.38	0.58	215	1.20	0.48
Gordon & Children	543	2.48	0.78	542	1.44	0.64	541	1.29	0.59
Gordon & Muppets	121	2.76	0.55	121	1.50	0.68	119	1.39	0.64
Bob & Children	312	2.52	0.74	311	1.52	0.67	311	1.32	0.61
Bob & Muppets	156	2.60	0.72	155	1.46	0.66	154	1.38	0.61
Susan & Big Bird	180	2.74	0.61	180	1.46	0.60	180	1.26	0.49
Susan & Oscar	128	2.68	0.61	126	1.41	0.60	126	1.29	0.53
Susan & Children	399	2.60	0.70	395	1.52	0.68	394	1.37	0.61
Hooper & Big Bird	147	2.60	0.71	148	1.41	0.57	147	1.29	0.56
Hooper & Oscar	126	2.62	0.63	125	1.39	0.58	124	1.23	0.50
Jenny & Children	111	2.59	0.69	110	1.57	0.64	110	1.34	0.58
Kermit & Monster or Muppets	260	2.57	0.73	257	1.47	0.60	258	1.27	0.53
Visiting Star & Children	191	2.70	0.62	190	1.63	0.74	188	1.65	0.78

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*Included on this page are viewing scores for characters and combinations

TABLE 36

Visual Viewing Scores for Selected Characters by Age of Child

		Age 3			Age 4			Age 5		
		N	Mean	SD	N	Mean	SD	N	Mean	SD
4	Bob	20	2.70	0.57	101	2.62	0.71	11	2.27	0.79
5	Susan	39	2.62	0.67	140	2.64	0.71	28	2.71	0.60
10	Visiting Stars	23	2.74	0.62	136	2.73	0.60	23	2.83	0.49
11	Buddy & Jim	58	2.74	0.58	220	2.54	0.79	30	2.50	0.73
14	Bert & Ernie	114	2.66	0.66	512	2.68	0.67	104	2.67	0.65
16	Muppets	69	2.68	0.65	340	2.68	0.67	75	2.65	0.65
17	Children	68	2.69	0.58	345	2.70	0.64	65	2.54	0.75
23	Gordon & Oscar	30	2.63	0.67	144	2.47	0.75	20	2.60	0.75
25	Gordon & Children	83	2.59	0.73	337	2.53	0.75	57	2.39	0.86
33	Bob & Children	49	2.57	0.65	203	2.54	0.75	32	2.44	0.80
40	Susan & Children	67	2.57	0.72	230	2.58	0.74	48	2.62	0.64
60	Kermit & Monster	42	2.62	0.73	143	2.56	0.74	35	2.34	0.84

TABLE 37

Visual Viewing Scores for Selected Characters by Sex of Child

		Male			Female		
		N	Mean	SD	N	Mean	SD
4	Bob	69	2.55	0.72	64	2.67	0.67
5	Susan	115	2.63	0.67	93	2.67	0.71
10	Visiting Stars	98	2.72	0.62	84	2.76	0.55
11	Buddy & Jim	161	2.52	0.78	149	2.62	0.73
14	Bert & Ernie	386	2.65	0.68	348	2.70	0.65
16	Muppets	275	2.70	0.64	211	2.64	0.69
17	Children	247	2.70	0.61	233	2.64	0.68
23	Gordon & Oscar	102	2.47	0.74	93	2.54	0.73
25	Gordon & Children	244	2.50	0.79	235	2.53	0.73
33	Bob & Children	142	2.56	0.74	143	2.50	0.73
40	Susan & Children	178	2.54	0.76	167	2.63	0.67
60	Kermit & Monster & Muppets	116	2.55	0.73	104	2.52	0.79

TABLE 38

Visual Viewing Scores for Selected Characters by Social Class of Child

		Middle Class			Lower Class		
		N	Mean	SD	N	Mean	SD
4	Bob	40	2.30	0.85	108	2.73	0.59
5	Susan	42	2.73	0.85	194	2.65	0.68
10	Visiting Stars	40	2.45	0.78	166	2.80	0.52
11	Buddy & Jim	90	2.59	0.70	263	2.56	0.77
14	Bert & Ernie	195	2.66	0.70	637	2.66	0.67
16	Muppets	116	2.59	0.75	438	2.70	0.63
17	Children	109	2.54	0.73	440	2.70	0.63
23	Gordon & Oscar	65	2.38	0.76	151	2.54	0.74
25	Gordon & Children	142	2.35	0.86	401	2.53	0.74
33	Bob & Children	58	2.21	0.83	254	2.59	0.70
40	Susan & Children	84	2.61	0.71	315	2.59	0.70
60	Kermit & Monster or Muppets	41	2.63	0.62	219	2.56	0.75

TABLE 39

VIEWING SCORES FOR CHARACTER COMBINATIONS AND PRODUCTION TECHNIQUES: TOTAL GROUP

CHARACTER COMBINATIONS	VISUAL			VERBAL			MOTOR		
	N	MEAN	SD	N	MEAN	SD	N	MEAN	SD
2. People	3523	2.62	0.70	3512	1.58	0.71	3511	1.38	0.63
3. Muppets	1997	2.66	0.67	1985	1.50	0.65	1984	1.31	0.51
4. Animals	386	2.48	0.80	385	1.51	0.65	384	1.34	0.59
5. People and Muppets	2357	2.61	0.70	2346	1.43	0.61	2339	1.29	0.55
6. People and Animals	754	2.48	0.77	751	1.50	0.64	751	1.28	0.56
7. Muppets and Animals	99	2.68	0.70	99	1.42	0.62	99	1.35	0.61
8. People, Muppets and Animals	73	2.63	0.61	73	1.58	0.69	72	1.39	0.64

PRODUCTION TECHNIQUES	VISUAL			VERBAL			MOTOR		
	N	MEAN	SD	N	MEAN	SD	N	MEAN	SD
2. Animation	2483	2.65	0.68	2478	1.57	0.68	2474	1.37	0.62
3. Film	1933	2.54	0.75	1928	1.53	0.67	1929	1.32	0.58
4. Books	344	2.51	0.77	340	1.34	0.58	340	1.23	0.54
5. Songs	1373	2.63	0.69	1363	1.58	0.72	1359	1.52	0.71
6. Film & Song	107	2.57	0.74	107	1.64	0.70	107	1.35	0.55
7. Photographs, Pictures or Sketches	589	2.57	0.71	589	1.54	0.66	589	1.32	0.57
8. Photographs, Pictures or Sketches and Song	111	2.69	0.63	111	1.79	0.70	110	1.59	0.64

TABLE 40a

Viewing Scores for Character Combinations by Age of Child

	3-Year-Olds			4-Year-Olds			5-Year-Olds		
				VISUAL					
	n	Mean	SD	n	Mean	SD	n	Mean	SD
People	499	2.64	0.66	2204	2.64	0.69	389	2.57	0.71
Muppets	285	2.65	0.67	1216	2.66	0.68	245	2.66	0.66
Animals	57	2.53	0.78	237	2.44	0.83	38	2.45	0.80
People and Muppets	322	2.63	0.67	1472	2.61	0.70	300	2.64	0.67
People and Animals	121	2.51	0.73	452	2.48	0.77	83	2.39	0.84
Muppets and Animals	14	2.79	0.58	50	2.70	0.71	14	2.64	0.63
People, Muppets and Animals	8	2.63	0.52	46	2.54	0.69	12	2.83	0.39
				VERBAL					
People	498	1.53	0.71	2195	1.59	0.71	389	1.54	0.66
Muppets	283	1.45	0.63	1210	1.50	0.64	245	1.56	0.65
Animals	57	1.44	0.68	237	1.49	0.63	38	1.50	0.56
People and Muppets	322	1.36	0.59	1467	1.42	0.62	296	1.54	0.59
People and Animals	121	1.43	0.63	452	1.51	0.66	81	1.62	0.62
Muppets and Animals	14	1.57	0.65	50	1.36	0.66	14	1.50	0.52
People, Muppets and Animals	8	1.63	0.74	46	1.52	0.68	12	1.83	0.58
				MOTOR					
People	498	1.45	0.70	2191	1.36	0.61	390	1.42	0.63
Muppets	282	1.33	0.59	1209	1.29	0.56	245	1.40	0.65
Animals	57	1.40	0.67	237	1.30	0.55	38	1.42	0.59
People and Muppets	320	1.31	0.59	1461	1.27	0.54	296	1.38	0.59
People and Animals	121	1.31	0.62	452	1.25	0.53	81	1.49	0.65
Muppets and Animals	14	1.29	0.45	50	1.36	0.63	14	1.50	0.65
People, Muppets and Animals	8	1.50	0.50	45	1.40	0.69	12	1.50	0.67

TABLE 40b

Viewing Scores for Production Techniques by Age of Child

	3-Year-Olds			4-Year-Olds			5-Year-Olds		
				VISUAL					
	n	Mean	SD	n	Mean	SD	n	Mean	SD
Animation	349	2.68	0.65	1501	2.67	0.67	307	2.48	0.78
Films	267	2.57	0.73	1192	2.56	0.75	220	2.40	0.82
Books	58	2.59	0.73	205	2.52	0.78	34	2.35	0.85
Songs	190	2.62	0.69	872	2.63	0.69	151	2.64	0.68
Film and Song	11	2.73	0.65	78	2.58	0.71	7	2.14	1.07
Photographs, Pictures or Sketches	78	2.59	0.69	344	2.58	0.71	82	2.56	0.75
Photographs, Pictures or Sketches and Song	16	2.69	0.60	63	2.73	0.63	19	2.68	0.58
				VERBAL					
Animation	348	1.51	0.66	1498	1.57	0.69	305	1.58	0.67
Films	265	1.44	0.66	1192	1.55	0.68	219	1.51	0.62
Books	58	1.41	0.62	202	1.31	0.57	33	1.30	0.47
Songs	188	1.52	0.71	865	1.56	0.72	151	1.67	0.73
Film and Song	11	1.55	0.69	78	1.71	0.72	7	1.43	0.79
Photographs, Pictures or Sketches	79	1.42	0.63	343	1.54	0.67	82	1.57	0.59
Photographs, Pictures or Sketches and Song	16	1.88	0.89	63	1.87	0.63	19	1.53	0.61
				MOTOR					
Animation	348	1.34	0.61	1496	1.34	0.60	305	1.45	0.65
Films	267	1.31	0.61	1192	1.31	0.57	220	1.39	0.61
Books	58	1.36	0.64	202	1.20	0.52	33	1.42	0.66
Songs	187	1.58	0.77	862	1.50	0.70	151	1.55	0.68
Film and Song	11	1.55	0.69	78	1.31	0.52	7	1.71	0.70
Photographs, Pictures or Sketches	79	1.47	0.68	343	1.28	0.52	82	1.37	0.55
Photographs, Pictures or Sketches and Song	15	1.47	0.64	63	1.67	0.65	19	1.47	0.60

TABLE 41a

Viewing Scores for Character Combinations by Sex of Child

	Male			Female		
	VISUAL					
	n	Mean	SD	n	Mean	SD
People	1679	2.62	0.69	1422	2.63	0.68
Muppets	934	2.66	0.68	819	2.66	0.67
Animals	168	2.42	0.82	166	2.49	0.81
People and Muppets	1150	2.61	0.68	957	2.61	0.71
People and Animals	346	2.50	0.77	314	2.42	0.78
Muppets and Animals	38	2.68	0.70	40	2.73	0.64
People, Muppets and Animals	42	2.67	0.61	24	2.50	0.66
	VERBAL					
People	1674	1.58	0.70	1417	1.56	0.70
Muppets	928	1.48	0.64	817	1.51	0.65
Animals	168	1.51	0.63	166	1.46	0.64
People and Muppets	1147	1.45	0.62	951	1.39	0.60
People and Animals	345	1.53	0.66	313	1.48	0.63
Muppets and Animals	38	1.47	0.65	40	1.38	0.63
People, Muppets and Animals	42	1.62	0.70	24	1.54	0.66
	MOTOR					
People	1674	1.41	0.66	1414	1.35	0.60
Muppets	930	1.33	0.60	813	1.30	0.56
Animals	168	1.38	0.63	166	1.30	0.54
People and Muppets	1140	1.31	0.57	950	1.30	0.54
People and Animals	344	1.29	0.56	314	1.27	0.58
Muppets and Animals	38	1.45	0.60	40	1.30	0.61
People, Muppets and Animals	42	1.56	0.73	23	1.13	0.34

TABLE 41b

Viewing Scores for Production Techniques by Sex of Child

	Male			Female		
VISUAL						
	n	Mean	SD	n	Mean	SD
Animation	1189	2.65	0.68	979	2.64	0.70
Film	890	2.55	0.75	796	2.53	0.76
Books	145	2.43	0.82	152	2.59	0.73
Songs	656	2.62	0.69	563	2.64	0.69
Film and Songs	55	2.71	0.60	41	2.37	0.86
Photographs, Pictures or Sketches	284	2.59	0.70	221	2.56	0.73
Photographs, Pictures or Sketches and Song	59	2.61	0.67	39	2.87	0.47
VERBAL						
Animation	1184	1.57	0.68	978	1.56	0.67
Film	890	1.56	0.68	793	1.49	0.65
Books	144	1.38	0.58	149	1.28	0.56
Songs	650	1.55	0.71	560	1.59	0.72
Film and Songs	55	1.73	0.73	41	1.59	0.70
Photographs, Pictures or Sketches	285	1.52	0.63	220	1.53	0.68
Photographs, Pictures or Sketches and Song	59	1.76	0.68	39	1.87	0.68
MOTOR						
Animation	1182	1.38	0.64	978	1.34	0.58
Film	890	1.36	0.62	796	1.28	0.55
Books	143	1.27	0.58	150	1.24	0.55
Songs	650	1.54	0.73	556	1.49	0.69
Film and Songs	55	1.38	0.59	41	1.34	0.53
Photographs, Pictures or Sketches	285	1.32	0.56	220	1.35	0.56
Photographs, Pictures or Sketches and Song	59	1.63	0.64	38	1.55	0.65

TABLE 42a

Viewing Scores for Character Combinations by Social Class of Children Viewing

	Middle Class			Lower Class		
			VISUAL			
	n	Mean	SD	n	Mean	SD.
People	703	2.52	0.76	2820	2.64	0.68
Muppets	411	2.63	0.71	1586	2.66	0.66
Animals	73	2.27	0.90	313	2.52	0.77
People and Muppets	488	2.49	0.78	1869	2.64	0.67
People and Animals	172	2.31	0.82	582	2.53	0.75
Muppets and Animals	18	2.61	0.78	81	2.69	0.68
People, Muppets and Animals	8	2.38	0.74	65	2.66	0.59
			VERBAL			
People	703	1.46	0.67	2809	1.60	0.71
Muppets	410	1.38	0.58	1575	1.54	0.66
Animals	72	1.36	0.66	313	1.54	0.64
People and Muppets	487	1.31	0.58	1859	1.46	0.61
People and Animals	172	1.37	0.64	579	1.55	0.64
Muppets and Animals	18	1.50	0.71	81	1.40	0.61
People, Muppets and Animals	8	1.00	0.00	65	1.65	0.69
			MOTOR			
People	701	1.18	0.48	2810	1.43	0.65
Muppets	409	1.14	0.40	1575	1.36	0.61
Animals	72	1.15	0.43	311	1.38	0.61
People and Muppets	488	1.09	0.34	1851	1.34	0.58
People and Animals	172	1.10	0.36	579	1.34	0.60
Muppets and Animals	18	1.28	0.46	81	1.37	0.64
People, Muppets and Animals	8	1.00	0.00	64	1.44	0.66

TABLE 42b

Viewing Scores for Production Techniques by Social Class

	Middle Class			Lower Class		
	VISUAL					
	n	Mean	SD	n	Mean	SD
Animation	516	2.60	0.72	1967	2.66	0.67
Film	390	2.39	0.83	1543	2.58	0.73
Books	75	2.48	0.83	269	2.52	0.76
Songs	275	2.54	0.75	1098	2.65	0.67
Film and Song	25	2.36	0.81	82	2.63	0.71
Photographs, Pictures or Sketches	100	2.58	0.68	489	2.56	0.72
Photographs, Pictures or Sketches and Song	15	2.53	0.74	96	2.72	0.61
	VERBAL					
Animation	517	1.45	0.67	1961	1.60	0.68
Film	389	1.45	0.68	1539	1.55	0.67
Books	74	1.26	0.50	266	1.36	0.60
Songs	274	1.45	0.66	1089	1.61	0.73
Film and Song	25	1.60	0.82	82	1.66	0.67
Photographs, Pictures or Sketches	100	1.37	0.58	489	1.58	0.67
Photographs, Pictures or Sketches and Song	15	1.67	0.82	96	1.81	0.69
	MOTOR					
Animation	515	1.14	0.41	1959	1.43	0.65
Film	389	1.12	0.38	1540	1.37	0.61
Books	74	1.12	0.44	266	1.26	0.56
Songs	273	1.28	0.55	1086	1.58	0.73
Film and Song	25	1.16	0.47	82	1.40	0.56
Photographs, Pictures or Sketches	100	1.11	0.37	489	1.37	0.59
Photographs, Pictures or Sketches and Song	15	1.27	0.59	95	1.64	0.63

12. Teacher Questionnaire.

Twenty-six of the 32 teachers whose classes watched Sesame Street in school responded to a questionnaire about the children's and their reactions to the show (see Appendix I). Ten of the responses were from Boston, six from Philadelphia, five from Durham, and five from Phoenix. The 26 teachers had a total of 387 children in their classrooms. The mean age of the children was about 4.25 years at the midpoint of Sesame Street's first year (February 1970). Most of the classes were full-day (about 7 hours) except in middle class Philadelphia where classes met usually for about five hours.

By and large, the teachers felt Sesame Street to be both appropriate and effective as a means of teaching young children. There were, however, some areas of disagreement among the teachers as to the usefulness of Sesame Street in the preschool classroom. Table 43 summarizes the responses to selected questions by site and for all teachers.

The Muppets were singled out by the teachers for their consistent ability to hold the children's attention. The show's treatment of numbers and letters and the music of Sesame Street were also rated as outstanding. The treatments of numbers and letters were cited as being two fundamental areas in which the idea that learning can be fun and interesting were exemplified.

Teachers felt that one major area of weakness was the attention-holding power of people on the screen, either interacting with one another or talking to the children on the set. This aspect was listed specifically as a weakness by 14 of the 26 teachers responding. However, another eight felt that the people on the screen did hold the attention of the class, and four of those mentioned Buddy and Jim as

TABLE 43

Responses to Teacher Questionnaires by Site

			City			
		Total	Boston	Suburban Philadelphia	Durham	Phoenix
		n=26	n=10	n=6	n=5	n=5
1. Parts of Sesame Street that best hold attention of class	Muppets	19	7	5	3	5
	Numbers	17	7	3	4	3
	Alphabet	12	5	1	4	2
	Music	13	6	3	3	2
	People on Set	8	1	2	4	3
	Cartoons	6	4	2	0	0
	Animals	5	2	0	4	1
2. Parts of Sesame Street that do not hold attention of class	People on Set	14	6	5	0	3
	Films	4	3	0	0	1
	Stories	4	2	0	2	0
3. Use of Parent/ Teachers Guide	Yes	20	9	1	4	4
	No	6	1	5	0	0
4. On a 5 point scale Effectiveness of:						
Muppets		4.3	4.0	4.7	4.5	3.5
Animation		4.4	4.0	4.8	4.5	3.7
Films		3.8	3.0	4.0	4.8	3.0
People		3.7	2.6	3.7	5.0	2.5
Animals		3.5	3.0	3.5	5.0	2.0
5. Average number of hours viewed per week		4.3	3.4	3.8	5.0	4.2
Average number of minutes watching per hour		35	39	18	53	28
6. On a 5 point scale Appropriateness of:						
Vocabulary level		4.5	4.2	4.2	4.5	4.8
Pace		4.0	4.2	4.0	4.8	4.5
Methods		4.4	3.5	4.3	4.5	4.8
Materials		4.6	4.2	4.5	5.0	4.3
Ability to maintain interest		3.9	3.7	3.3	5.0	3.5
Usefulness in school program		3.9	3.8	2.5	5.0	4.3

the people the children most enjoyed. There was no consensus among the teachers as to the major weakness of Sesame Street. There were, however, a variety of comments about weak areas. Examples: "The show does not stimulate creativity or individual exploration for learning;" "Language a little 'far out'"; and "More advanced learning needed." Buddy and Jim were cited most often as a part of the show that needed to be shortened, a suggestion offered by four different teachers. Thus Buddy and Jim appealed to some teachers and not to others.

Several teachers expressed their belief that Sesame Street should not be used in the classroom, but rather with children who do not go to school. Their feeling was that school time could be better spent in activities in which the children could have firsthand experiences. This attitude was expressed most often by teachers of middle class children.

The Parent-Teacher Guide was widely used by the teachers, and in a variety of ways. The most common uses were in classroom display and in planning lessons.

The question of whether and how the teachers attempted to integrate Sesame Street into their classroom program elicited various responses. One perspective is illustrated by the following statement: "The show is integrated simply because our own curriculum follows the same areas." A somewhat different reaction is the case in which Sesame Street became an integral part of the curriculum. "Not only can Sesame Street be integrated into the daily program...we have made various charts pertaining to the different concepts that we get from Sesame Street and they have become our curriculum...." Most teachers were somewhere between the two extremes, using aspects of Sesame Street to reinforce classroom teaching. Sesame Street also seemed to stimulate ideas among teachers for projects, activities, and discussions.

To summarize, the teachers liked the show, some aspects of it more than others. They shared a respect for Sesame Street's usefulness as an educational tool and its appropriateness for the preschool-aged child. They were most divided in their feelings about the show's relevance to the classroom. It seems reasonable to assume that such a division reflects real and predictable differences among teaching philosophies and that such differences are to be respected.

13. The Sesame Street Parent-Teacher Guide Interview.

During the posttesting of children (in May, 1970), 361 mothers of the encouraged at-home children were interviewed in order to learn about the use of the Parent-Teacher Guide in the sampled homes. The interview (See Appendix H) consisted of only six questions and was not intended as an in-depth survey.

Table 44 presents the results of the interview. Over 65 percent of those interviewed had seen the guide. Of those who had seen the guide, 74 percent had used it. However, this means that of the 361 interviewed less than half (48%) had actually used the guide. Almost all obtained the guide from the ETS observer and used it as a wall poster. The group who used it more constructively (from an educational point of view) was relatively small. For example, only 34 percent of the mothers used it to find out things they could do with their children.

The major finding would seem to be that for this group of children the guide was not a major factor in the Sesame Street experience.

TABLE 44

Questions and Response Frequencies of At-Home Parents Concerning the Sesame Street Parent-Teacher Guide

N=361

Question	Response and Response Rate	Frequency	Percentage
"Have you ever seen one of these before?" (holding the inside page of a Parent-Teacher Guide)	Yes	236	65.37
	No	125	34.63
	Note: All subsequent percentages are of the 236 who have seen the Guide.		
"Have you ever used the guide?" (asked of 236 who responded Yes to the first question)	Yes	174	73.73
	No	61	25.85
	Other	1	0.42
"What have you used it for?" (asked of the 174 who responded Yes to the previous question) —check as many as apply	Find what is on the show	79	33.47
	Find things to do with child	81	34.32
	Find names of books of interest to child	21	8.90
	As a wall poster	98	41.53
	Other	71	30.03
"How often is it used in your home?"	Almost everytime show is on	31	13.14
	Once or twice a week	57	24.15
	Once or twice a month	47	19.92
	Less than once a month	39	16.53
	Never used it	62	26.27
"Where did you usually get your copies of it?" —check one answer only	In the mail	9	3.81
	At a local store	0	0.00
	At a church	0	0.00
	At a school	9	3.81
	Borrowed from someone else	0	0.00
	From the ETS observer	153	64.83
	Other	4	1.69

B. Probing Analyses

Embedded in the descriptions of the effects of Sesame Street presented in the previous section lie a host of provocative questions. Inasmuch as a great deal of descriptive data have been provided, the reader has the opportunity of developing answers to some of the questions himself. In this section of the report, two major probes will be presented -- an "age cohorts" study and a "high vs. low learning" study. Both studies are presented descriptively but they go beyond the simple groupings of children described in the previous section and they provide some insights behind the scene set by the descriptive section.

1. The Age Cohorts Study

One of the problems noted in the earlier descriptions of the data was that of the confounding of important variables. High viewers in a real sense selected themselves. When compared with the lowest viewing quartile they were seen to be, even on the pretest, more proficient in those areas measured by the test battery. Results from the parent questionnaires also showed that the heavy viewers, even within the inner-city areas, came from homes that were relatively more affluent and where the parents were somewhat better educated.

The problem then is to unconfound from amount of viewing the related child achievement and home background factors. That is, granted that the tables and graphs in the previous section show high viewers gaining more than low viewers, is this due solely to amount of viewing or is it due to an interaction of amount of viewing, previous achievement, and a more affluent home background?

The use of the covariance technique was considered as a means of overcoming the confounding. However, covariance was considered to be inappropriate for these data. Fortunately, a less controversial and more efficient alternative was available. (Please see footnote in section C of this chapter.)

What would be the result if the children at pretest were to be used as a sort of "norm" group? That is, could we find out the average scores of children at each age level, before Sesame Street was ever telecast, and then use these "norm" scores to compare children at the same age levels after Sesame Street had been telecast for its first six month season? This basic approach had a high potential value, but it needed modification. The posttest scores had to be independent of the pretest scores, so some selectivity in the age level comparisons was necessary. In fact, we took only those children who were 53 to 58 months old at pretest (group 1 children) and compared them with children who were 53 to 58 months old at posttest (group 2 children). By definition these groups were independent -- no child in group 1 could also be in group 2. The age ranges were wide enough to insure that a sufficient number of children were in each group -- and since the groups came from the central, relatively rectangular section of the overall age distribution, (see Table 1 above) the age distributions within each group were similar.

It was further decided to limit the two groups by including only at-home children from disadvantaged areas. At-school children were omitted because those in group 1 would have had pretest scores (October, 1969) that included an increment due to one month's schooling, whereas posttest scores of at-school children in group 2 (May, 1970) would have had an increment due to seven month's schooling. The decision to restrict the comparison to disadvantaged children was based partly on the fact that the addition of some middle class children would have added an unnecessary factor to contend with in interpreting the results.

There were 114 children in group 1 (53-58 months of age at pretest) and 101 children in group 2 (53-58 months old at posttest). A comparison could now have been made between these two groups (pretest scores of group 1 vs. posttest scores of group 2). However, to make one further modification in the design, each group was subdivided into its viewing quartiles. Thus, the comparison of group 1 with group 2 was a more refined one. One would expect that the posttest scores of low viewers in group 2 would not be much higher than the pretest scores of low viewers in group 1. After all, many group 2 low viewers had never watched Sesame Street, and the others had watched it only rarely. At the other extreme, high viewers in group 2 might be expected to have considerably higher posttest scores than the pretest scores of the potential high viewers in group 1, assuming that heavy viewing of Sesame Street was effective.

Table 45 provides the relevant data and Figures 10 a - f present them graphically. The Grand Total scores were somewhat different for low viewers (Q1), group 2 exceeding group 1 by about 12 points, but for higher viewers (Q3 and Q4), group 2 exceeded group 1 by about 40 points. These gains were somewhat lower than the gains observed in the previous descriptive groupings because group 1 and group 2 children in this design were exactly the same age. None of the differences in gains in the age cohorts design

TABLE 45

Pretest and Posttest Scores for Disadvantaged, At-Home Children (by viewing quartiles)

Group 1 = children who were 53-58 months old at time of pretest
Group 2 = children who were 53-58 months old at time of posttest
(Age cohorts)

st & Subtest	Maximum Possible Score	Q_1				Q_2				Q_3				Q_4			
		Group 1 N=31		Group 2 N=26		Group 1 N=33		Group 2 N=33		Group 1 N=27		Group 2 N=18		Group 1 N=23		Group 2 N=24	
		Pretest		Posttest		Pretest		Posttest		Pretest		Posttest		Pretest		Posttest	
		Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
and Total	203	76.77	22.27	88.42	21.83	81.97	18.90	101.70	24.78	90.37	25.21	130.33	29.59	99.04	36.42	139.33	35.99
dy Parts Total	32	17.87	6.49	21.04	6.01	20.24	5.74	22.91	5.84	21.93	5.57	26.83	3.73	22.87	5.51	26.75	4.58
Pointing to Body Parts	5	3.13	1.50	3.31	1.46	3.91	1.04	3.88	1.08	3.78	0.97	4.39	0.78	4.17	1.15	4.42	0.93
Naming Body Parts	15	8.58	2.85	9.15	2.69	9.39	3.29	9.97	2.58	10.22	2.41	11.67	2.14	10.43	2.37	11.50	2.38
Function of Body Parts (Point)	8	4.03	2.37	5.77	2.16	4.55	2.12	6.15	2.05	5.52	1.83	7.17	1.15	5.48	2.31	7.29	1.20
Function of Body Parts (Verbal)	4	2.13	1.48	2.81	1.41	2.39	1.22	2.91	1.42	2.41	1.55	3.61	0.61	2.78	1.35	3.54	0.93
tters Total	58	14.06	6.45	14.65	3.91	13.09	3.65	18.24	6.82	14.81	5.90	26.83	11.89	18.52	11.33	31.92	14.18
Recognizing Letters	8	2.00	1.46	2.31	1.52	2.42	1.64	3.21	1.76	2.37	1.62	4.72	2.59	2.91	2.09	4.96	2.65
Naming Capital Letters	16	1.32	2.99	0.85	1.08	0.67	1.34	2.24	3.36	0.96	2.16	6.22	5.16	3.17	5.37	9.29	5.80
Naming Lower Case Letters	8	0.77	1.50	0.54	0.76	0.27	0.45	0.64	1.11	0.44	1.09	2.33	2.45	0.96	2.18	3.17	2.90
Matching Letters in Words	4	2.97	1.17	3.38	1.02	2.88	1.17	3.82	0.39	3.48	0.89	4.00	0.00	3.52	0.79	3.83	0.64
Recognizing Letters in Words	4	1.74	1.18	1.77	0.99	1.33	0.99	1.52	1.06	1.56	1.12	2.17	1.38	1.57	1.20	2.54	1.38
Initial Sounds	4	0.90	0.87	0.81	0.75	0.73	0.63	1.00	0.90	0.89	0.64	1.00	1.14	1.00	0.67	1.25	0.74
Reading Words	6	0.00	0.00	0.00	0.00	0.03	0.17	0.00	0.00	0.00	0.00	0.11	0.32	0.17	0.83	0.54	1.38
rms Total	20	7.45	3.36	11.04	3.43	9.09	3.21	11.21	3.27	9.93	4.08	14.22	3.61	10.35	4.21	15.46	3.91
Recognizing Forms	4	1.68	1.30	2.77	1.21	2.27	1.28	2.06	1.27	2.00	1.11	2.72	1.45	1.83	1.30	3.25	1.15
Naming Forms	4	0.42	0.50	1.46	1.14	0.88	0.89	1.48	1.25	1.04	1.13	2.44	1.42	1.26	1.39	3.04	1.04
mbers Total	54	16.77	7.06	19.00	7.64	17.97	7.10	23.76	9.63	20.37	9.42	32.67	10.67	23.96	12.42	35.54	11.77
Recognizing Numbers	6	1.71	1.37	2.00	1.33	2.03	1.49	2.33	1.74	1.96	1.51	2.83	1.69	2.57	1.88	4.13	1.75
Naming Numbers	15	1.06	2.86	1.04	2.65	1.00	1.84	2.58	3.40	1.26	2.92	5.72	4.57	3.91	4.35	7.58	5.06
Numerosity	6	3.39	1.20	3.46	1.58	3.58	1.58	4.06	1.60	3.74	1.83	5.11	0.90	4.04	1.77	4.96	1.30
Counting	9	4.32	2.40	5.19	2.04	4.85	2.25	5.97	2.26	5.63	2.54	7.00	1.97	5.43	2.83	7.38	1.79
Addition and Subtraction	7	1.29	1.24	1.62	1.47	1.52	1.33	2.30	1.69	1.89	1.22	2.94	1.55	2.04	1.89	3.17	1.69
tching Subtest	11	7.97	2.93	9.31	1.85	8.45	1.99	9.97	1.16	8.78	2.28	10.33	0.59	9.17	1.67	10.00	1.50
lational Terms Total	17	9.61	2.35	10.65	2.78	10.33	2.98	11.30	2.27	10.81	2.32	12.39	2.48	10.26	3.77	18.00	2.52
Amount Relationships	9	4.65	1.64	5.27	1.54	5.09	1.74	5.61	1.58	5.37	1.39	6.11	1.41	5.17	2.10	5.58	1.67
Size Relationships	2	1.65	0.55	1.81	0.40	1.67	0.54	1.79	0.42	1.85	0.46	2.00	0.00	1.52	0.51	1.83	0.38
Position Relationships	5	3.00	1.39	3.12	1.37	3.09	1.33	3.39	1.14	2.96	1.34	3.61	1.29	3.09	1.50	3.92	1.21
rting Total	6	2.13	1.38	2.69	1.41	1.67	1.29	3.33	1.49	2.81	1.55	4.28	1.32	2.30	1.22	4.54	1.25
assification Total	24	10.71	3.84	11.96	4.25	11.03	2.91	13.79	4.25	12.89	4.50	17.78	4.10	13.04	5.06	17.75	5.14
Classification by Size	2	1.19	0.79	0.96	0.77	0.97	0.73	1.27	0.57	1.26	0.71	1.44	0.70	1.17	0.65	1.46	0.83
Classification by Form	6	1.77	1.38	2.50	1.27	2.06	1.12	2.88	1.22	2.70	1.61	3.61	1.42	2.78	1.81	4.08	1.50
Classification by Number	6	2.06	1.09	2.35	1.29	2.18	0.92	2.36	1.37	2.44	1.45	4.22	1.48	2.65	1.27	3.67	1.76
Classification by Function	9	5.29	1.47	5.81	1.81	5.45	1.50	6.76	1.97	5.93	1.73	7.78	1.44	5.91	2.21	7.79	1.82
zzles Total	5	2.03	1.56	2.31	0.93	2.55	1.37	2.55	1.39	2.26	1.02	3.44	1.38	2.52	1.44	2.92	1.35
abody IQ*	--	75.97	26.63	81.08	20.17	80.03	21.94	85.09	15.82	82.67	19.28	88.33	19.94	86.61	28.72	88.08	20.06

*Differences in IQ between Group 1 and Group 2 within each quartile are not significant.

can be due to age differences between groups.

In the Letters Test, for example, the evidence is quite striking. Low viewers (Q1) in group 2 answered, on the average, less than one question more than low viewers in group 1. On the other hand, highest viewers (Q4) in group 2 answered, on the average, over 13 more questions correctly. In every subtest of the Letters Test, group 2 children in Q2, Q3, and Q4 answered more questions correctly than group 1 children from the same quartiles.

Scores on the Peabody Picture Vocabulary Test (converted to IQ's for purposes of comparison) were small and not significant across any of the levels of viewing quartiles.

One might argue that group 2 was somehow systematically different from group 1, and that this difference was accentuated in the high-viewing groups. The only obvious difference between the two groups was one of month of birth, but that difference existed for Q1 children as much as for Q4 children. As a check on their backgrounds, parent questionnaire responses of group 2 parents were compared with responses of group 1 parents. Some of these data are presented in Tables 46 and 47. It can be seen that there were no apparent systematic background differences between the two groups.

Similar results occurred in Body Parts, Forms, Numbers, Matching, Relational Terms, Sorting, Classification, and Puzzles. In almost every subtest, Q2, Q3, and Q4 children in group 2 scored higher than group 1 children and the largest differences almost always occurred in quartiles 3 or 4.

In short, the age cohorts study took at-home, disadvantaged children who were 53-58 months old at posttest and compared their scores with those of 53- to 58-month-old children from the same neighborhoods at pretest. In general, there were increasing differences between these two groups of children the more Sesame Street viewing intruded. At the Q1 viewing level, differences were small; at the Q3 and Q4 viewing levels, they were relatively large. The data of these two groups will be subjected to further statistical treatment in section three of this chapter. For the moment, it is sufficient to indicate that this study design overcomes the confounding problems of amount of viewing with prior attainments, SES, IQ, and home background. The results seem to indicate that Sesame Street was quite effective in many areas -- and the results certainly are worthy of the further examination that will be presented in Section 3 below.

FIGURE 10a

Total Test Scores and Peabody I Q 's for Disadvantaged At-Home Children

(by viewing quartiles)

The Age Cohorts Study

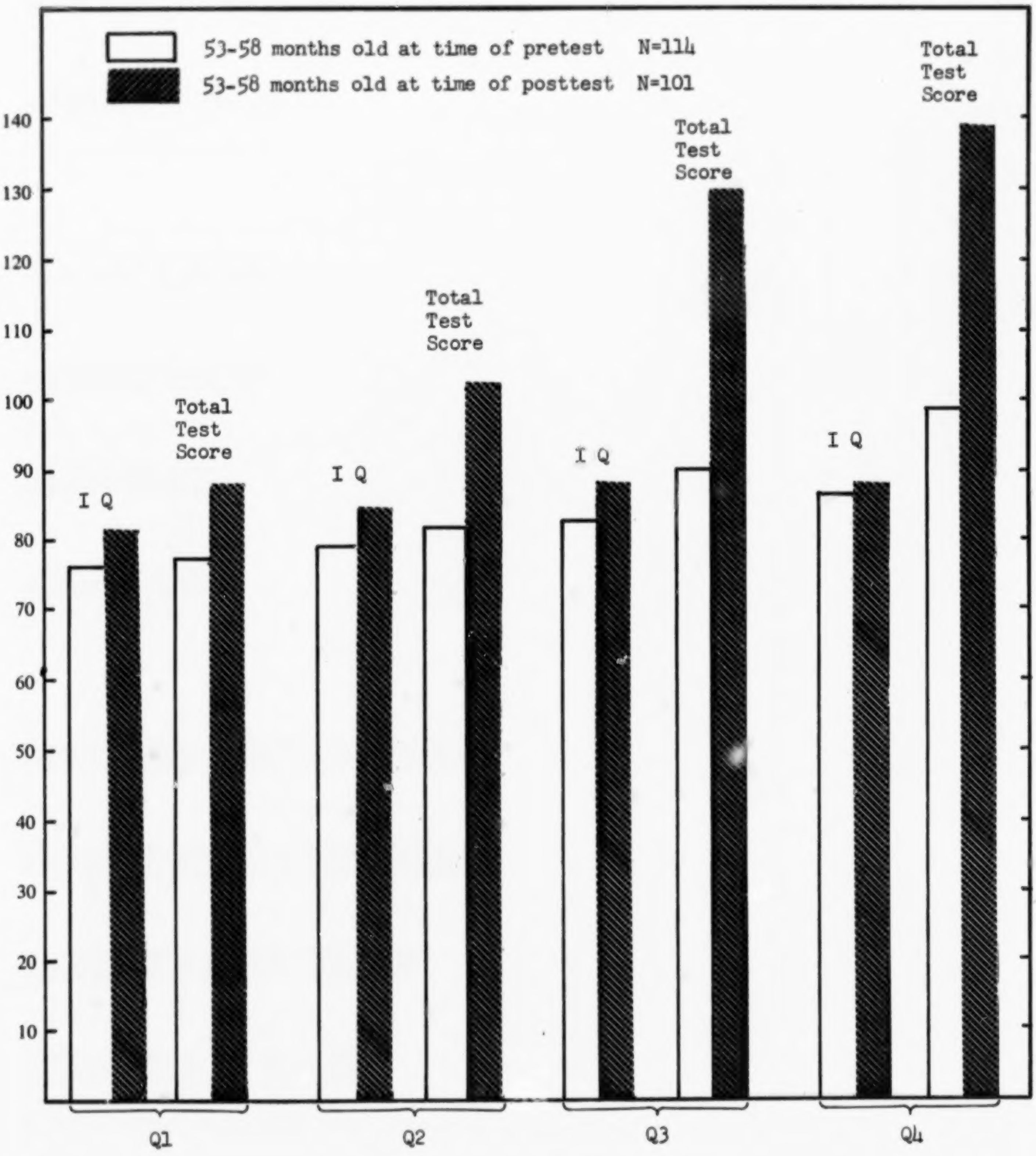

FIGURE 10b

Selected Pretest and Posttest Scores for Disadvantaged, At-Home Children

(by viewing quartiles)

Dashed lines beneath test titles indicate maximum possible scores.

THE AGE COHORTS STUDY

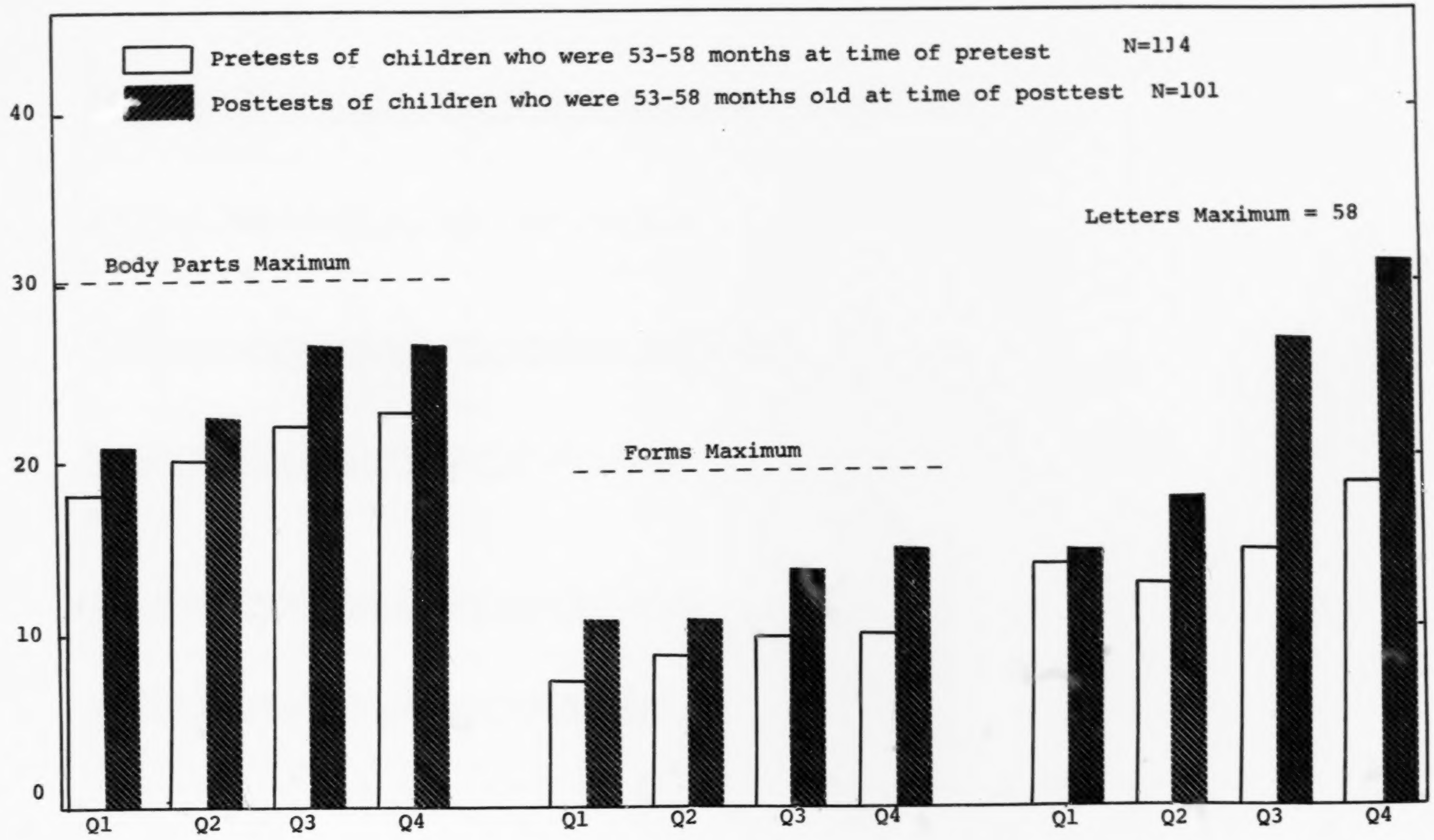

FIGURE 10c

Selected Pretest and Posttest Scores for Disadvantaged, At-Home Children

(by viewing quartiles)

Dashed lines beneath test titles indicate maximum possible scores.

THE AGE COHORTS STUDY

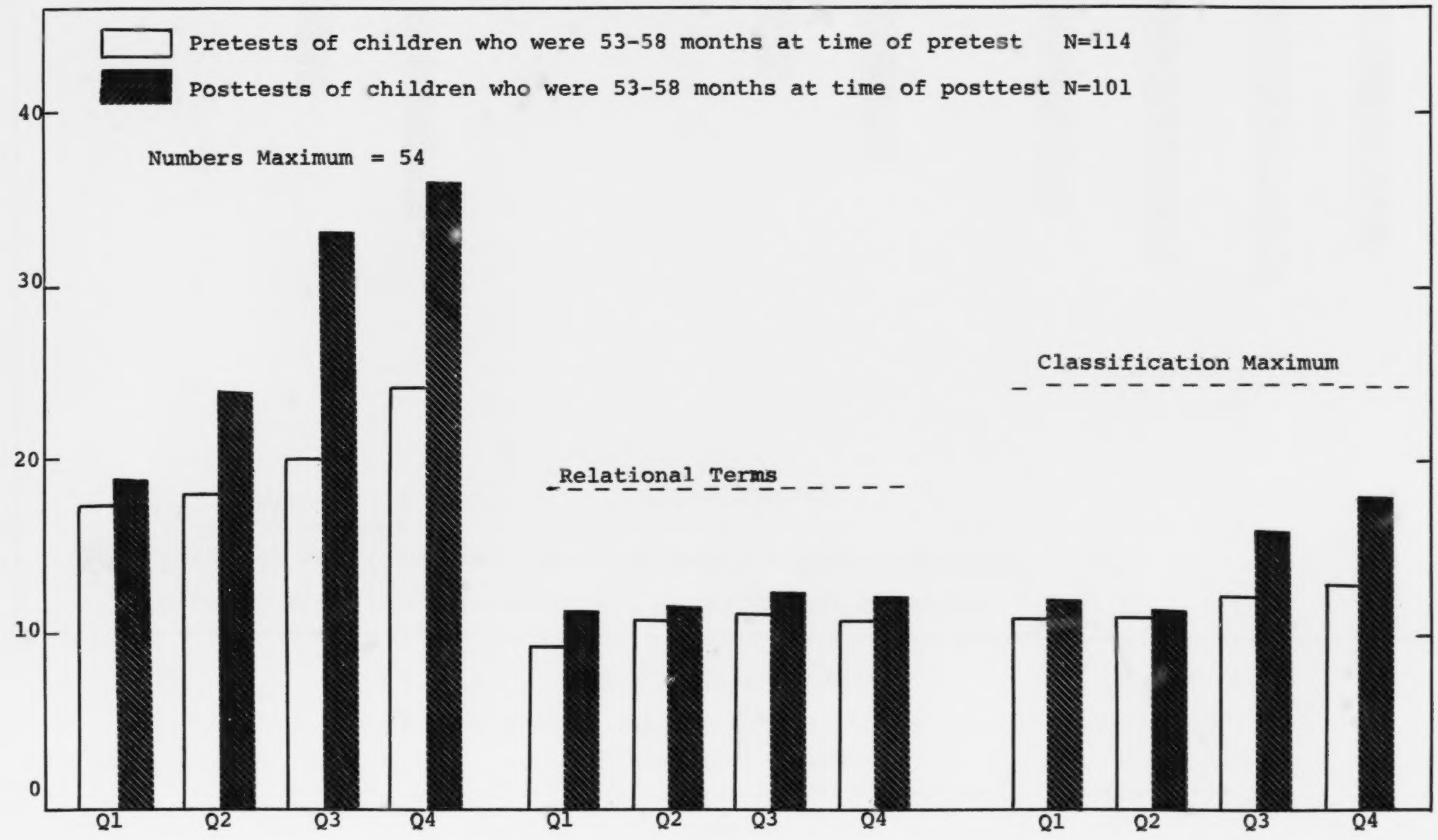

FIGURE 10d

Selected Pretest and Posttest Scores for Disadvantaged, At-Home Children

(by viewing quartiles)

Dashed lines beneath test titles indicate maximum possible scores.

THE AGE COHORTS STUDY

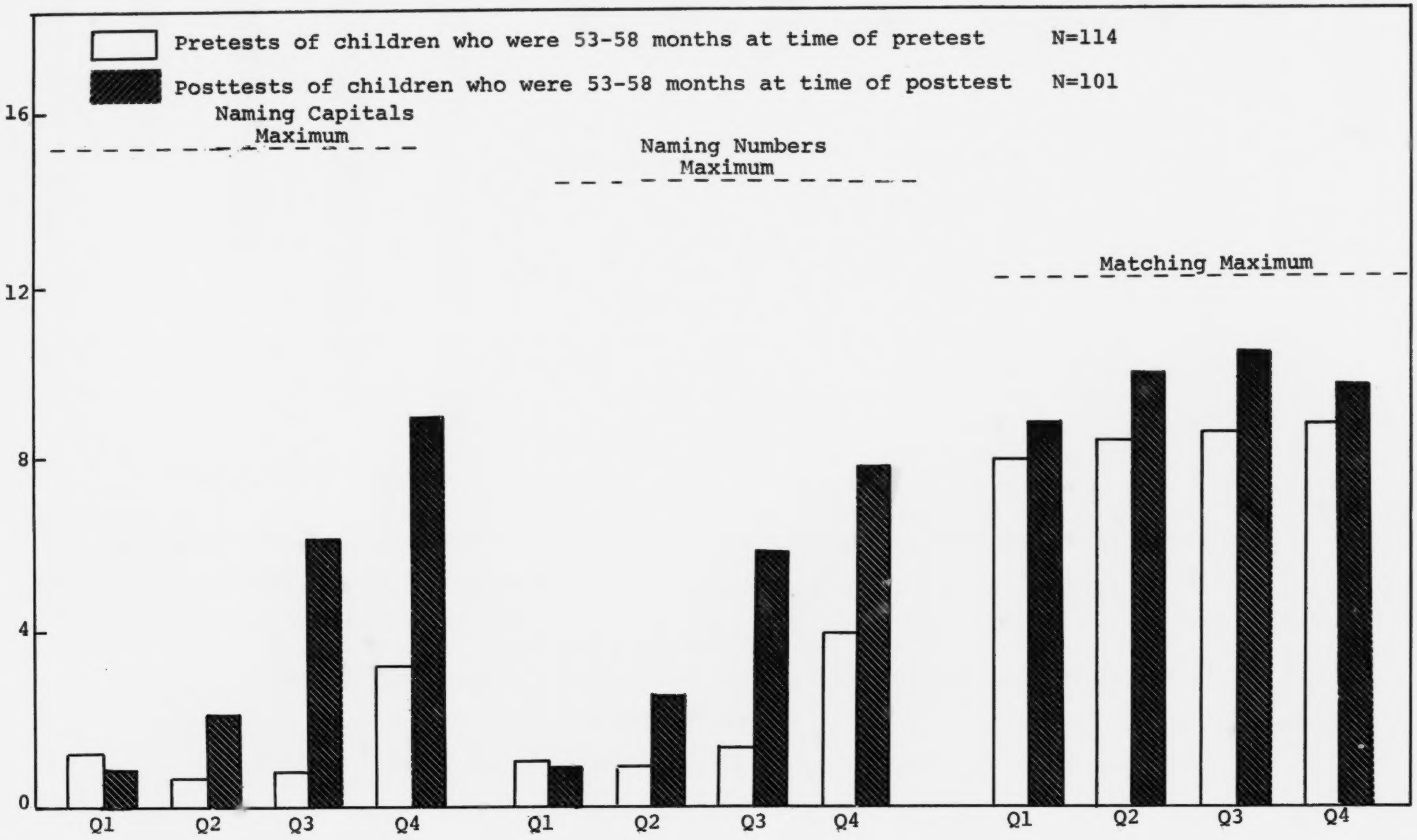

FIGURE 10e

Selected Pretest and Posttest Scores for Disadvantaged, At-Home Children
(by viewing quartiles)
Dashed lines beneath test titles indicate maximum possible scores.

THE AGE COHORTS STUDY

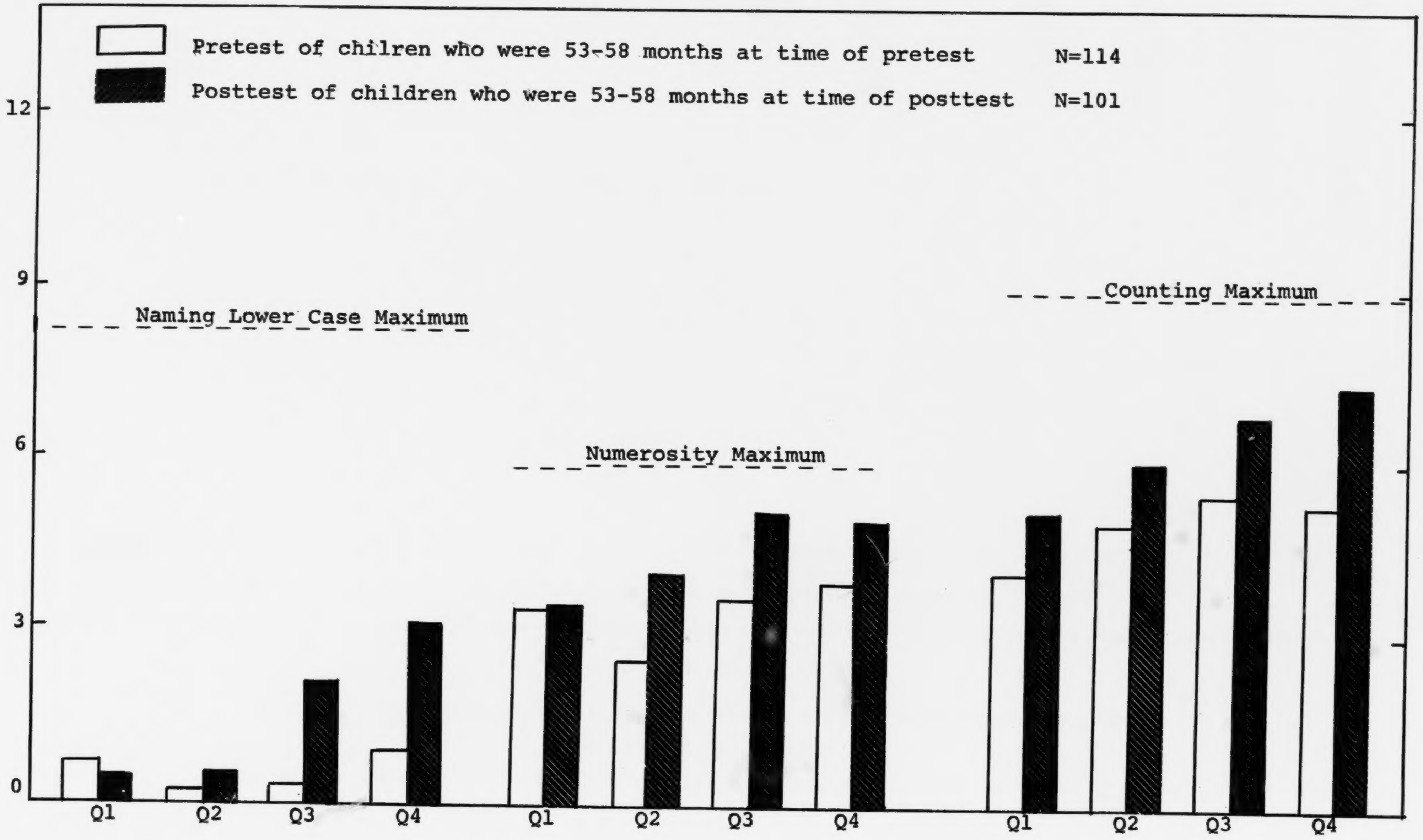

FIGURE 10f

Selected Pretest and Posttest Scores for Disadvantaged, At-Home Children
(by viewing quartiles)
Dashed lines beneath test titles indicate maximum possible scores.

THE AGE COHORTS STUDY

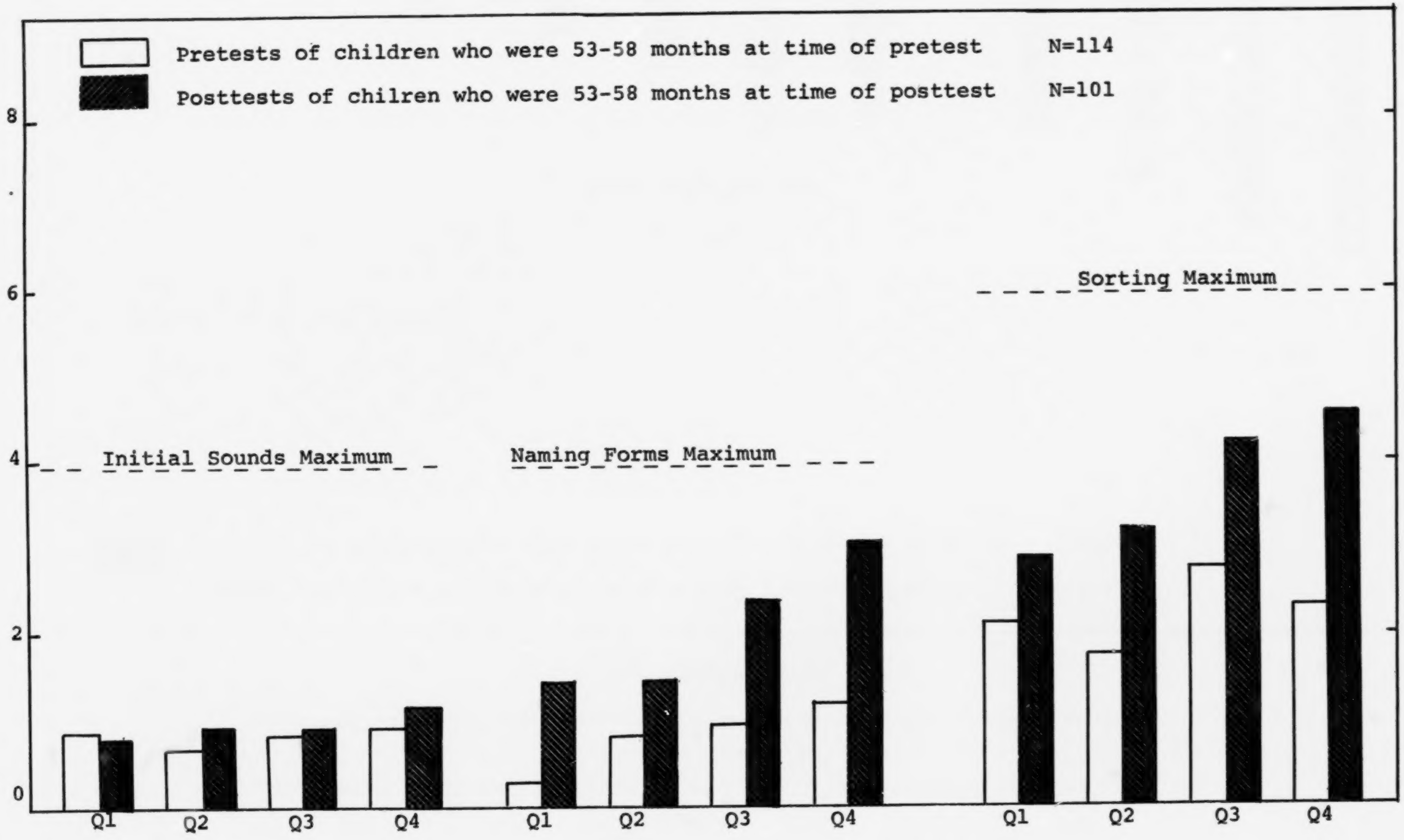

TABLE 46

Parent Questionnaire Scales for Aqe Cohorts

Group 1 (53-58 months at pretest) N=112 Q1=30 Q2=32 Q3=27 Q4=23
Group 2 (53-58 months at posttest) N=95 Q1=21 Q2=31 Q3=19 Q4=24

	Maximum Possible Score	Total		Q1		Q2		Q3		Q4		P
		Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	
Parents'Expectation												
Group 1 **Pre**	50	35.9	7.5	33.0	7.1	37.0	9.0	36.8	4.6	37.0	8.0	.124
Group 2 **Post**	50	36.2	5.4	33.7	5.1	37.3	4.9	36.8	4.7	36.8	6.2	.104
Child Affluence												
Group 1 **Pre**	6	3.3	1.4	3.1	1.4	3.6	1.6	3.5	1.4	3.4	1.3	.812
Group 2 **Post**	6	3.7	1.3	3.0	1.4	4.0	.9	3.6	1.2	3.7	1.5	.042
Child Educational Uses												
Group 1 **Pre**	21	3.5		3.6		3.3		3.7		3.4		
Group 2 **Post**	21	3.2		2.8		3.6		3.1		2.9		
Parents' Affluence Group 1	14	8.5	2.7	7.7	1.9	8.3	2.7	9.3	2.0	8.8	3.9	.131
Group 2	14	8.4	2.4	7.2	2.3	8.5	2.2	8.4	2.6	9.2	2.2	.047
Mean Years of Parents' Education Group11	16	10.4	2.9	9.9	2.5	10.1	3.1	11.4	1.7	10.4	2.9	.224
Group 2	16	10.4	1.7	10.4	2.0	10.5	1.4	10.2	1.9	10.6	1.8	.880

TABLE 47

Selected Parent Questionnaire items for Age Cohorts

Group 1 = 53-58 months at pretest time
Group 2 = 53-58 months at posttest time

		P		Pretest Questionnaire*				Posttest Questionnaire*			
		Pre	Post	Q1 N= 32	Q2 N=34	Q3 N= 27	Q4 N= 22	Q1 N= 21	Q2 N=34	Q3 N= 21	Q4 N=26
How often child uses art things at home.	Once a day	ns	ns	22%	35%	26%	23%	29%	35%	38%	35%
	Several a week			44	47	52	59	48	38	57	50
	Once a week or less			25	9	15	9	10	24	5	12
	Never			3	9	0	0	5	3	0	0
	Don't know			6	0	7	10	10	0	0	4
What mother usually does with child.	Plays with him	.05	ns	63	82	44	68	67	82	67	69
	Reads to him	ns	ns	53	53	48	41	62	76	48	73
	Housework	ns	ns	72	68	85	77	67	85	86	69
	Watches TV	ns	ns	25	12	22	9	19	18	29	35
	Watches TV with him	ns	ns	75	79	74	64	86	88	76	92
	Reads by herself	ns	ns	22	12	7	18	19	26	29	38
How often child is read to.	Once a day	ns	ns	19	32	11	14	14	9	19	31
	Several a week			28	18	37	18	33	32	29	35
	Once a week or less			38	29	22	32	29	47	38	23
	Never			9	15	4	0	14	0	0	4
	Don't know			6	6	26	9	10	12	14	8
Do most children have to be forced to learn?	Almost all the time	ns	ns	6	0	7	0	0	3	0	0
	Most of the time			16	9	19	9	5	3	5	8
	Sometimes			69	65	59	68	81	79	71	65
	Never			9	21	15	14	14	15	24	27
Does your child have to be forced to learn?	Almost all the time		ns	**				0	0	0	4
	Most of the time							5	3	10	0
	Sometimes							71	62	62	54
	Never							24	35	29	42

ns = not statistically significant

*Responses do not always total 100% because of some incomplete questionnaires.

**Question not asked in this questionnaire.

TABLE 47

Selected Parent Questionnaire Items for Disadvantaged Chilren

(Age Cohorts)

		P		Group 1				Group 2			
				Pretest Questionnaire				Posttest Questionnaire			
		Pre	Post	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Hours child watched TV yesterday.	6 or more	ns	ns	9%	6%	4%	14%	14%	15%	10%	15%
	4 or 5			0	29	26	9	24	21	14	38
	2 or 3			38	26	33	23	43	38	48	31
	Less than 2			44	38	30	50	19	24	29	15
Does child ever watch local ETV?	Yes	ns	(.001)	44	29	41	55	62	97	100	96
Mother watches Sesame Street with child.	Almost always		ns	**				10	35	33	38
	Usually							10	15	19	15
	Sometimes							47	38	43	42
	Hardly ever							5	12	5	4
	No Sesame Street							29	0	0	0
Mother and child talk about Sesame Street.	Almost always		ns	**				24	15	33	38
	Usually							14	21	19	38
	Sometimes							24	47	48	23
	Hardly ever							10	18	0	0
	No Sesame Street							29	0	0	0
Child plays games based on Sesame Street.	Almost always		(.01)	**				0	3	14	23
	Usually							10	0	19	8
	Sometimes							14	44	43	50
	Hardly ever							33	18	14	8
	Don't know							14	35	10	12
	No Sesame Street							29	0	0	0
How helpful is Sesame Street for your child?	Not helpful		(.01)	**				0	0	0	0
	Somewhat							43	21	10	4
	Very							29	74	90	92
	Don't know							0	6	0	4
	No Sesame Street							29	0	0	0

TABLE 47

Selected Parent Questionnaire items for Disadvantaged Children
(Age Cohorts)

		P		Group 1				Group 2			
				Pretest Questionnaire				Posttest Questionnaire			
		Pre	Post	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Kind of TV on which child watches Sesame Street.	Black & white Color No Sesame Street		ns		**			71% 0 29	88% 12 0	81% 19 0	81% 19 0
								Pretest Questionnaire			
								N=25	N=31	N=19	N=25
Employment of male head of household.	35 hours a week or more 10-35 hours Less than 10 hours Other	ns	ns	63% 0 0 38	62% 12 3 24	74% 4 0 22	73% 0 0 27	44 4 0 52	58 10 0 32	89 0 0 11	84 4 0 12
Number of people living in child's home.	2 3-4 5-6 7-8 Over 8	ns	ns	6 28 34 22 9	0 29 41 18 6	0 26 48 22 4	5 23 41 27 5	0 24 28 40 8	3 26 48 23 0	0 32 32 16 21	0 36 28 16 20
Number of rooms in house.	1-2 3-4 5-6 7-8 Over 8	ns	ns	31 41 22 6 0	53 26 15 0 6	52 37 11 0 0	64 36 0 0 0	44 32 16 8 0	52 16 26 6 0	47 37 16 0 0	52 28 20 0 0

2. The High vs. Low Learning Study

One of the Gibraltars of education, standing imperiously through the ages against the seas of teaching fads and fashions, is that of individual differences in the learner. Essentially, some children learn well some of the time, some children do not learn well some of the time. Just which children learn well depends on circumstances, teaching techniques, and what is being taught. Although some children tend to be more frequently in the high-learning group while others tend to be more frequently in the low learning group, there is undoubtedly interchange. There emerges a rather depressing picture of who does not usually learn well in today's public schools -- he tends to be male rather than female, and from an economically deprived background. His attitudes and habits tend to be dissonant with those of the dominant middle class culture. But our knowledge of who learns well or poorly is virtually void when we turn to the teaching medium of the television tube coupled with the pedagogy of a mixture of variously paced visual presentations.

From the data presented in the first section of this report, two obvious facts can be documented. A large number of children were heavy watchers of Sesame Street. Not all of these children were high learners in terms of gain scores. The mean total gain of all Q4 children from pretest to posttest was 48.15 with a standard deviation of 25.44 (see Table 10 above). That is, about two-thirds of the children in Q4 had gains between 23 and 74 points -- mean gain plus or minus one standard deviation. However, the range of gains went from a loss of 39 to an increase of 106. Even assuming some of the variance was due to errors of measurement, it is clear that in the group that watched Sesame Street most, some children benefited a great deal, and some relatively little.

The question addressed in this section, then, is: What were the characteristics of the high learners in contrast to the low learners? In attempting to answer this question, some unconfounding of factors had to be made. First, as we have already indicated, we had to restrict ourselves to the Q4 group because otherwise low learners would tend to be confounded with low amounts of viewing and high learners with high amounts of viewing. Second, we directed attention to the at-home children only, because if at-school children were mixed in, there might be a tendency for high learners to be school attenders (and their high viewing dependent as much upon their interation with the teacher as upon their interaction with Sesame Street). Finally, it was decided to narrow the focus one step more by studying only the disadvantaged. This helped reduce the problem of an unnecessary confounding of social class background and amount of learning. Thus, we were left with at-home, disadvantaged children who viewed Sesame Street a great deal. And the question being asked about this group is: What differentiated the high learners from the low learners?

There were 88 children who were at-home, disadvantaged, high-viewing (Q4) children. Seventy-eight of them had complete pretest and/or posttest parent questionnaires. This group of 78 was divided into high and low learning quartiles on the basis of their total score gains. When compared with all 943 children in our sample, 43 of the 78 were in the top quartile with respect to total score gains and 11 of the 78 were in the bottom quartile with respect to total score gains. One would expect this lack of proportionality because it has already been made clear that high viewers on the average learned more than nonviewers or low viewers.

Tables 48 and 49 provide pretest and posttest questionnaire comparisons of the high learners and low learners. There were differences that can be seen from these data. The small number of children with questionnaire data makes interpretation of these data difficult. It does seem, however, that there was a real (and statistically significant) difference between the high and low learners in the degree to which their mothers talked with them about Sesame Street ($p < .05$). The children who learned most had mothers who talked with them about Sesame Street, as reported in the posttest Parent Questionnaire. We can speculate that the mothers' interest served to reinforce the children's learning and/or to motivate them to watch the show attentively.

Another general area of difference in the backgrounds of high and low learners seems to be SES. In terms of affluence (a score derived from responses to several of the questions in the Parent Questionnaire), the parents of the two groups were identical. However, the parents of the high learners were better educated on the average than the parents of low learners. The average number of people living in the homes of high learners was slightly lower than the number living in the homes of low learners. The average number of rooms in the dwellings of high learners was higher than the average number for low learners. And, finally, the male heads of the households of high learners were more regularly employed than the males in the low learners' households. The small but consistent differences in these indices seem to point to a slightly higher SES level among the parents of high learners. The children who learned most were themselves slightly more affluent than the children who learned least. That is, they tended to have more things of their own (rooms, radios, books, etc.) than the low learners. Another set of very slight differences between the two groups appeared in the area of their parents' attitudes toward schools. The differences were slight and the groups were small, but the variables are intriguing. For instance, the parents of low learners answered "yes" less frequently to the question of whether teachers understand the problems of the community. They also were less likely than parents of high learners to believe that they themselves could do anything to improve their schools.

Aside from the small differences cataloged above, there seem to be have been no consistent differences between the high and low learners in the areas of home background covered in the Parent Questionnaire. In addition, comparison of these groups' PPVT IQ's shows no significant difference. The low learners' IQ averaged 91 (SD = 19.0) and the high learners had an IQ of 89 (SD = 16.7). Unfortunately, the small size of the groups makes it difficult to say anything very definitive about the factors which caused some children to learn more than others under similar conditions of viewing.

TABLE 48

Parent Questionnaire Scales for High-Low Learning Study

Pretest High N=41
Low N=10
Posttest High N=43
Low N=10

		High	Low
	Maximum Possible Score	Mean	Mean
Parents'Expectation			
Pre	50	36.9	37.3
Post	50	38.7	37.0
Child Affluence			
Pre	6	3.9	3.7
Post	6	3.9	3.7
Child Educational Uses			
Pre	21	3.0	3.9
Post	21	2.6	4.9
Parents' Affluence	14	8.6	8.6
Mean Years of Parents' Education	16	11.4	10.2
Age in months at Pretest	--	49.6	50.9

TABLE 49

Selected Parent Questionnaire Items for High-Low Learning Study

		P		Pretest Questionnaire*		Posttest Questionnaire*	
		Pre	Post	High N=41	Low N=10	High N=43	Low N=10
How often child uses art things at home.	**Once a day**	ns	ns	39%	30%	47%	20%
	Several a week			51	40	40	50
	Once a week or less			5	30	14	10
	Never			0	0	0	0
	Don't know			5	0	0	20
What mother usually does with child.	**Plays with him**	ns	ns	71	50	79	80
	Reads to him	ns	ns	54	60	81	90
	Housework	ns	ns	73	80	88	80
	Watches TV	ns	ns	17	20	37	30
	Watches TV with him	ns	ns	68	50	93	100
	Reads by herself	ns		20	20	35	20
How often child is read to.	**Once a day**	ns	ns	22	30	30	10
	Several a week			37	40	33	60
	Once a week or less			24	0	23	20
	Never			0	10	7	0
	Don't know			7	20	7	10
Do most children have to be forced to learn?	**Almost all the time**	ns	ns	5	10	0	0
	Most of the time			7	0	5	10
	Sometimes			68	50	73	60
	Never			12	30	23	30
Does your child have to be forced to learn?	**Almost all the time**	ns	ns	**		0	10
	Most of the time					0	0
	Sometimes					50	20
	Never					51	70

ns = not statistically significant

*Responses do not always total 100% because of some incomplete questionnaires.

**Question not asked in this questionnaire.

TABLE 49

Selected Parent Questionnaire Items for High-Low Learning Study

		P		Pretest Questionnaire		Posttest Questionnaire	
				High	Low	High	Low
Hours child watched TV yesterday.	6 or more	ns	ns	20%	20%	7%	20%
	4 or 5			20	10	49	20
	2 or 3			29	40	23	40
	Less than 2			29	30	21	10
Does child ever watch local ETV?	Yes	ns	ns	59	60	97	90
Mother watches Sesame Street with child.	Almost always		ns	**		41	20
	Usually					16	40
	Sometimes					28	40
	Hardly ever					14	0
	No Sesame Street					0	0
Mother and child talk about Sesame Street.	Almost always		.05	**		44	10
	Usually					28	80
	Sometimes					28	10
	Hardly ever					0	0
	No Sesame Street					0	0
Child plays games based on Sesame Street.	Almost always		ns	**		21	30
	Usually					16	30
	Sometimes					51	20
	Hardly ever					7	20
	Don't know					5	0
	No Sesame Street					0	0
How helpful is Sesame Street for your child?	Not helpful		ns	**		0	0
	Somewhat					5	10
	Very					95	80
	Don't know					0	10
	No Sesame Street					0	0

TABLE 49

Selected Parent Questionnaire Items for High-Low Learning Study

		P		Pretest Questionnaire		Posttest Questionnaire	
				High	Low	High	Low
Kind of TV on which child watches Sesame Street.	**Black & white**		ns	**		74%	80%
	Color					26	20
	No Sesame Street					0	0
Employment of male head of household.	**35 hours a week or more**	ns		81%	50%	**	
	10-35 hours			7	0		
	Less than 10 hours			0	0		
	Other			12	50		
Number of people living in child's home.	**2**	ns		0	0	**	
	3-4			7	20		
	5-6			46	50		
	7-8			34	20		
	Over 8			12	10		
Number of rooms in house.	**1-2**	ns		0	0	**	
	3-4			29	30		
	5-6			51	70		
	7-8			17	0		
	Over 8			2	0		
Schools better or worse with parent control?	Better	ns		20	20		
	Same			5	20		
	Worse			34	20		
	Don't know			41	40		
Do teachers understand problems of community?	Yes	ns		44	20		
	No			27	20		
	Don't know			29	40		
Can you do anything to improve schools?	Yes	ns		32	20		
	No			22	50		
	Don't know			44	30		
Times moved in last three years.	0	ns		56	20		
	1			32	70		
	2-3			12	10		
	More than 3 times			0	0		

C. Inferential Analyses

The preceding sections of this chapter have provided in some detail a description of the effect of Sesame Street. This section will present the statistical treatment of some of these data in order to answer the major question: Could the observed gains of the children who viewed the show, in comparison with the observed gains of the nonviewers, be reasonably regarded as chance results? Are differences among the viewing quartiles statistically significant?

The statistical tool used to analyze the results was multivariate analysis of variance (MANOVA). The differences between pretest and posttest scores (gains) of all disadvantaged children except Spanish-speaking were entered into the MANOVA to be reported. Simple gain scores were used throughout these and succeeding MANOVA's because reliabilities were high. The alternative would have been to conduct an analysis of convariance on the posttest scores using pretest scores as covariates. However, there was no way of determining from the data the appropriate regression coefficient to use.[1] In any case, gain scores, when appropriate as they are here, are more readily interpretable and hopefully less subject to technical argument than the covariance alternative.[2]

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[1] Cochran, W. G., Analysis of Covariance: Its nature and uses. Biometrics, 1957. 13, 261-81.

[2] A number of discussions were held on the topic of whether to use the covariance technique. The consensus was not to do so for technical reasons--the problem associated with Lord's Paradox, the natural confounding in the data, and interpretational problems. In fact, some multivariate analyses of covariance were run, and for those readers who wish they had been presented, the results from covariance do not change the findings or interpretations obtained from the approach set forth in this section. That is, when pretest scores, IQ's, and the SES index were used as covariates and gains as the dependent variables, the results of this study were not, in general changed.

Before proceeding with the MANOVA's, a series of factor analyses on pretests and posttests were conducted using a principal components solution with varimax rotation. It was noted that before rotation a large general factor was present, and this was true for all major subgroups of subjects -- 3-, 4-, and 5-year-olds, boys and girls, middle class and lower class children, and at-home and at-school children. This close similarity of factor structures remained after varimax rotation. The nine factors that now emerged were readily interpretable. They were marked by logically consistent combinations of subtests in the pretest and posttest battery -- letters, classification, numbers, body parts, matching, forms, relational terms, sorting, and matching letters in words. This occurred in all subgroupings of the children's data.

1. All Disadvantaged children (except Spanish speakers)

The first question addressed by the MANOVA on the disadvantaged children (N=731) was: What, overall, is the impact of viewing Sesame Street? The independent variables included in the analysis were the amount of viewing (V), encouraged and not-encouraged (E), sex (S), and at-home or at-school (H). The dependent variables were gains on the eight total test scores and on the Grand Total score.

The major elements in the analysis are presented in Table 50 from which the analysis was drawn, and in Table 51 which presents the results. It can be seen from Table 51 that none of the interactions were significant. This fortunately allows a much simpler interpretation of the main effects. The amount of viewing (V) was clearly significant (p<.001). It could be anticipated, even from a cursory examination of the descriptive data in Section A of this chapter, that the higher the viewing time the greater the gain. Encouragement was also a significant main effect. This factor is harder to interpret. What seems certain is that the finding is not particularly important for this evaluation. Probably there was some confounding of sites with the encouraged but not-observed condition. A further analysis revealed that the encouragement effect was related to a difference between the encouraged observed children and the encouraged not-observed children. This difference was apparently caused by the fact that none of the encouraged rural children were observed, but they also happened to be children who gained a great deal. In short, a site was confounded with the variable and the significance probably results from the high gains of rural children rather than from the effects of encouragement.

TABLE 50

Within Cells Correlations of Criteria, with Standard Deviations on Diagonal,
for Gain Scores on Test Totals and Grand Totals of All Disadvantaged Children (except Spanish-speaking)

Variable	1	2	3	4	5	6	7	8	9
1. Gain Body Parts	5.325								
2. Gain Letters	.154	9.633							
3. Gain Forms	.319	.249	3.857						
4. Gain Numbers	.272	.521	.360	8.499					
5. Gain Sorting	.190	.147	.309	.326	1.799				
6. Gain Relational Terms	.206	.147	.325	.362	.198	3.211			
7. Gain Classification	.251	.196	.552	.426	.303	.321	4.704		
8. Gain Puzzles	.140	.105	.394	.182	.148	.131	.267	1.672	
9. Grand Total	.529	.737	.599	.822	.390	.488	.566	.309	23.136

TABLE 51[1]

Analysis of Test Total and Grand Total Gains for all Disadvantaged Children Excluding Spanish Speakers

Dependent Variables: Gains on total scores for Body Parts, Letters, Forms, Numbers, Sorting, Relational Terms, Classification, Puzzles, Grand Total

Source of Variance	F	df_1	df_2	p
H S V	.888	27	1972	.63
H S E	.690	18	1350	.82
E V	1.299	54	3446	.07
S V	.919	27	1972	.58
S E	.547	18	1350	.94
H V	1.277	27	1972	.16
H E	.603	18	1350	.90
H S	.618	9	675	.78
V* (Viewing)	6.834	27	1972	.001
E* (Encouraged)	3.176	18	1350	.001
S* (Sex)	1.922	9	675	.046
H (Home — School)	NA due to confounding with E			
H eliminating E**	3.489	9	675	.001

*Significant at the .05 level.

**Valid test of H.

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[1] In this and subsequent MANOVA tables the ordering of the source of variance has been reversed from the usual mode of presentation. That is, the order of the removal of confoundings is here presented from the bottom up, but the order of the testing of significance from the top down.

The at-home versus at-school factor was significant ($p < .01$). Inspection of the descriptive data indicates that children at home gained a little more than children at school. This unexpected outcome may partly be due to the fact that at-home children began at pretest somewhat lower than at-school children. It should be noted that the MANOVA is sensitive to differences even when they occur in only one of the dependent variables being assessed. The scores relating to the home-school difference will be presented below, but it should again be emphasized that this has no bearing on the effectiveness of Sesame Street, which was equally effective both at home and at school. Sex was significant, as a main effect, at the .05 level. Inspection of the descriptive data does reveal some slight differences favoring girls over boys with respect to gains. These have been noted earlier (see Part 4 Section A).

The significance of the viewing effect should be interpreted in light of the failure to obtain significant interactions. It indicates that amount of viewing operated similarly within each of the subgroups mentioned in Table 51. That is, viewers gained more than nonviewers, at home as well as at school. Boy viewers benefited similarly to girl viewers. Encouraged children who viewed gained just as did not-encouraged children who viewed. Similarly, the triple interactions were not significant, indicating that viewing was beneficial across even smaller subgroupings of children -- for example, boys at school who were encouraged to view or girls at home who were not encouraged to view (but who viewed anyway).

It is, of course, worth examining each of the dependent variables mentioned in Table 51 with respect to the effects of amount of viewing.

That is, while amount of viewing was clearly a significant factor for all of the gain scores considered together, was it significant for each of the gain scores separately?

It can be seen in Table 52 that all dependent variables were significantly affected by amount of viewing except for gains on the Body Parts Test. As was observed in Section A (above), the Body Parts Test was apparently affected by a ceiling effect, i.e., Sesame Street was attempting to teach what many children already knew.

The mean gains on the eight total tests for the four viewing groups can be obtained by reference to Table 11 above. From an examination of the gains for high viewing (Q4) and low viewing (Q1) groups, it can be seen that differences were quite large. For instance, the gains on the Letters Test in Q1 differed from those for Q4 by 11.67, a difference which is large in comparison with standard deviations of 7.43 for Q1 and 11.19 for Q4. Most other differences between high and low viewing groups were about equal to or in excess of their standard deviation. These then are large effects. As was noted earlier in the descriptive section, the posttest scores almost invariably moved upward from Q1 to Q4 while this was not always so for the pretest scores.

Table 53 provides the univariate interpretive data for the home-school main effect. Only the Letters Test and the Relational Terms Test gains were significant ($p < .01$). An examination of Tables 18a and 18b seems to indicate that at-home children had lower pretest scores but slightly higher gains. The sensitivity of the overall MANOVA to just one or two significant effects can thus be documented. Let it be stressed that this evaluation was not concerned with home versus

Table 52

Univariate Interpretive Data, Test of V**

Variable	F(1, 683)	p
Gain Body Parts	.763	.51
Gain Letters*	42.842	.001
Gain Forms*	17.051	.001
Gain Numbers*	24.579	.001
Gain Sorting*	14.246	.001
Gain Relational Terms*	4.724	.003
Gain Classification*	17.867	.001
Gain Puzzles*	2.776	.04
Gain Grand Total*	42.252	.001

*Significant at the .05 level.

**From Table 51.

Table 53

Univariate Interpretive Data, Test of H**

Variable	F(1, 683)	p
Gain Body Parts	.864	.35
Gain Letters*	8.407	.004
Gain Forms	.480	.49
Gain Numbers	2.583	.11
Gain Sorting	.386	.54
Gain Relational Terms*	9.561	.002
Gain Classification	1.974	.16
Gain Puzzles	.079	.78
Gain Grand Total	.338	.56

*Significant at the .05 level.

**From Table 51.

Table 54

Univariate Interpretive Data, Test of S**

Variable	F(1, 683)	p
Gain Body Parts	.041	.84
Gain Letters	.537	.46
Gain Forms	.129	.72
Gain Numbers	3.134	.08
Gain Sorting	.251	.62
Gain Relational Terms	2.997	.08
Gain Classification	2.188	.14
Gain Puzzles*	5.063	.025
Gain Grand Total	2.198	.14

*Significant at the .05 level.

**From Table 51.

school as a variable. Its inclusion was primarily to look for interaction with amount of viewing -- to discover whether Sesame Street worked equally well in both settings. There was no significant interaction. Sesame Street was effective both at home and at school, and that is the point being made here. An interesting tangential interpretation is that since the children seemed to gain as much from viewing at home as at school, the presence of a professional teacher did not seem to be an important contributory factor in benefiting from Sesame Street.

The difference between the sexes was also significant. Table 54 provides the univariate interpretive data for the sex effect. Only the Puzzles Test gains seemed to differentiate boys from girls significantly, but the size of the difference here seems educationally unimportant. The boys gained less than the girls as can be seen in Tables 15a and 15b but not significantly less. Again the important point to be made is that Sesame Street was not significantly more effective for girl viewers than for boy viewers. Only rarely did girls significantly outgain boys, and when this did happen it was not due to interaction with amount of viewing -- it occurred across all viewing quartiles.

One of the disturbing elements in schools in disadvantaged areas (such as those areas from which this sample of children was obtained) is that girls in fact do outdistance boys in school subject achievement. We have already noted that boys watched Sesame Street about as often as girls and that even if their visual attention to particular segments was a little less, their relevant motor responses were a little more. That so few differences between boys and girls in gains could be discerned leads one to conjecture that maybe techniques such as those used in Sesame Street could be introduced into the public school, with relative benefit to disadvantaged boys.

To summarize the most relevant findings of this section to this point: The data on test score gains for disadvantaged children (except of Spanish-speakers) were entered into a MANOVA. Amount of viewing was highly significant, but the effect did not interact with encouragement, home—school, or sex. In short, the positive effects of Sesame Street were shown to be statistically significant for all subgroups tested -- boys, girls, encouraged, not-encouraged, at-home, at-school -- both separately and in combination.

It is important to realize that the positive effects of Sesame Street for the disadvantaged viewer have been presented on the basis of gains on the major tests totaled over their respective subtests. It was clear that there were very significant gains on the Letters Test but the question yet to be answered concerns whether the effect held across all subtests (which, in turn, assessed subgoals in the Letters area). To seek an answer to this question, a group of MANOVA's was conducted, each one investigating a different set of subtest scores.

The subtests of Body Parts were the first group to be investigated -- Pointing, Labeling, Function (pointing to pictures), and Function (verbal responses) (see Table 55). It will be recalled that amount of viewing was not an important factor with respect to gains on the total Body Parts Test. The viewing factor remained non-significant for this test. The home-school factor which was significant for the total gain score remained significant when total gain was broken into its subtest gains. Subsequent univariate analyses indicated that it was only on the Function (pointing to pictures) subtest that the significant effects occurred. This is not particularly relevant to this evaluation, but the effect may be due to the fact that the at-home children began at a lower

Table 55

Analysis of Subtest Effects for Gains on Body Parts - Pointing, Labelling, Function (pointing to pictures) and Function (verbal responses) for all Disadvantaged Children excluding Spanish Speakers

Source of Variance	F	df_1	df_2	p
HSV	.352	12	1799	.98
HSE	1.078	8	1360	.38
EV	1.338	24	2373	.13
SV	.859	12	1799	.59
SE	.904	8	1360	.51
HV	1.045	12	1799	.40
HE	.602	8	1360	.78
HS	.990	4	680	.41
V (Viewing)	1.170	12	1799	.30
E* (Encouragement)	4.014	8	1360	.001
S (Sex)	.627	4	680	.64
H* (Home-School)	2.950	4	680	.02

*Significant at the .05 level.

level and therefore had more to gain. Again encouragement produced a significant main effect.

The next group of subtests to be investigated were all part of the Letters Test except for the Matching subtest. Even there, six of the 11 matching items involved letters. Table 56 presents the MANOVA summary for these nine subtests. Two of the interactions were significant -- encouragement by viewing, and home-school by encouragement. Subsequent univariate analyses of these two interactions indicated no subtest was affected by the encouragement by viewing interaction at the .01 level and that matching was the only goal area involved at that level for the home-school by encouragement interaction. That is, the two significant interactions were far from pervasive.

While Table 56 indicates that three main factors (viewing, encouragement, and home-school) were important in considering the Letters subtests, it does not indicate which specific subtests were affected by which factor. The main effect of most interest is that of amount of viewing (V). Table 57 presents the univariate effects of viewing and indicates that six of the nine subtests were significantly affected by the amount of viewing of _Sesame Street_.

Two important points should be made. The first point is that for the most part, _Sesame Street_ was effective in achieving its purpose that viewers would learn in those areas specified in the goals statement. As well, it can be seen that some transfer learnings occurred as in the case of Reading Words. For the disadvantaged group the six items in the reading subscale were significantly affected by amount of viewing despite the fact that reading words was _not_ a _Sesame Street_ goal nor was it directly taught on the show.

Second, Table 57 shows that, of the three non-significant tests,

Table 56

Analysis of Subtest Effects for Gains on Matching (Total), Matching Letters, Recognizing Letters, Naming Capital Letters, Matching Letters in Words, Recognizing Letters in Words, Naming Lower Case Letters, Initial Sounds, Reading Words for all Disadvantaged Children excluding Spanish Speakers

Source of Variance	F	df_1	df_2	P
HSV	.744	27	1972	.82
HSE	1.373	18	1350	.13
EV*	1.590	54	3446	.004
SV	1.225	27	1972	.20
SE	1.047	18	1350	.40
HV	1.185	27	1972	.23
HE*	2.149	18	1350	.003
HS	.498	9	675	.88
V* (Viewing)	6.425	27	1972	.001
E* (Encouragement)	2.311	18	1350	.001
S (Sex)	.578	9	675	.81
H* (Home-School)	5.224	9	675	.001

*Significant at the .05 level.

Table 57

Univariate Interpretive Data, Test of V**

	F(3, 683)	p
Gain Matching Total*	2.636	.049
Gain Matching Letters	.685	.561
Gain Recognizing Letters*	18.263	.001
Gain Naming Capital Letters*	46.391	.001
Gain Matching Letters in Words	.481	.696
Gain Recognizing Letters in Words*	11.208	.001
Gain Naming Lower Case*	32.892	.001
Gain Initial Sounds	.566	.638
Gain Reading Words*	14.662	.001

*Significant at the .05 level.

**From Table 56.

Table 58

Mean Gains for Effect of Viewing from Letters Test**

	Q_1	Q_2	Q_3	Q_4
Gain Recognizing Letters	.65	1.37	2.06	2.56
Gain Naming Capital Letters	1.35	3.31	5.17	7.25
Gain Recognizing Letters in Words	.31	.58	.82	1.16
Gain Naming Lower Case Letters	.37	1.02	1.91	2.60
Gain Reading Words	.02	.05	.18	.37

**From Tables 56 and 57.

paralleled the goals statement in terms of difficulty showed ceiling effect -- that is, most children could do the matching at pretest and there was little room for gain. In two instances, (see items 11 and 12 of Matching subtest of the Letters Test in Table 9 above) the matching item involved transfer of training. The items went beyond the goal, were not too difficult, and tended to show some viewing effect. But generally it must be admitted that the matching goals were inappropriate for disadvantaged 3- through 5-year-old children -- they had already been fairly well attained, especially for 4-and 5-year-olds.

To obtain some notion of the size of the gains for each viewing quartile, Table 58 is presented. This table presents again the data presented earlier in the descriptive section (see Table 11), now with the added assurance that these gains across viewing groups would rarely have occurred by chance. Note that in the Naming Capital Letters subtest the mean gain rose from 1.35 in the lowest viewing group to 7.25 in the highest viewing group. Even for Reading Words the gains increased from an average of .02 to an average of .37.

A final comment on the Reading subtest seems desirable. The content analyses indicated that a relatively large amount of time was spent on the topic of initial sounds. Animation was the primary technique used (see Tables 38 and 39) and seemed to be one of the most successful techniques for holding the children's attention (see Tables 35 through 42 for details). Now clearly the amount of time and the use of animation would have been expected to increase learning, but nonetheless, gains on the Initial Sounds subtest were not significant. The difference between Q1 and Q4 was only .16 on a four item scale.

The topic of initial sounds was taught quite indirectly on Sesame Street. There was a great deal of alliteration but the child's attention was being focussed on the letter shape rather than the sound. Apparently it was hoped that he was learning both, but the visual impression came through more strongly than the sound. At least on an experimental basis some effort might be placed on teaching initial sounds more directly and without the distraction of competing goals.

Table 56 indicates that two other main effects were operating in the Letters subtests. One of these was the encouragement condition. Three groups of children were involved -- the encouraged who were observed, the encouraged who were not observed, and the not-encouraged. A detailed presentation of the data will not be made here because the effect is tangential to the focus of the study, but an examination of the data revealed that three subtests were involved at the .01 level -- Recognizing Letters, Naming Capital Letters, and Naming Lower Case Letters. The source of the involvement seems to lie in the erratic gains of the relatively small disadvantaged, encouraged, not-observed group.

The home-school variable was also seen to have a significant main effect in the Letters subtest. Again a comparison of home and school is not part of the charge of this report. The data indicated that at-home children did better overall than at-school children in four subtests -- Matching Letters, Matching Letters in Words, Naming Capital Letters, and Naming Lower Case. The at-home children started at a somewhat lower level and this may have been a factor. Remember that this was not an interaction with viewing -- at-home children and at-school children did not gain differentially with amount of viewing.

The next MANOVA pass investigated the dependent variables Recognition of Forms, Labelling Forms, and Matching Froms. Again, gain scores were used and the same four independent variables were entered -- amount of viewing, sex, home-school, and encouragement. Table 59 presents the results.

One interaction, home-school by encouragement was significant, but subsequent analyses indicated its effect was a primary result of performance on matching forms. Three main effects, including the viewing factor, were significant. The interaction took place with respect to matching of forms ($p < .04$)

The univariate treatment of the amount of viewing is presented in Table 60. It may be seen that, as in past analyses, matching was not affected by amount of viewing. However, the other two tests, assessing the goals of recognition and naming of forms, were clearly affected by amount of viewing. The relevant means are presented in Table 61 in order to allow the reader to assess for himself the educational, as distinct from the statistical, significance of this result. Note that the two tests in question contained four items each. Thus an increase of 1.1 and 1.8 respectively for Q4 (high viewers) was large in comparison to the Q1 (low or no viewing) gains of .41 and .64.

The significant main effect for the encouragement condition occurred in the naming of forms where the gain of the encouraged not-observed group was higher than that of either the encouraged, observed group, or the not-encouraged group.

The statistically significant main effect for home-school occurred in matching forms, but the actual differences were not great.

Table 59

Analysis of Subtest Effects for Gains on Recognition, Naming, and Matching of Forms for all Disadvantaged Children excluding Spanish Speakers

Source of Variance	F	df_1	df_2	p
HSV	.834	9	1658	.58
HSE	1.074	6	1362	.38
EV	1.557	18	1927	.063
SV	1.773	9	1658	.068
SE	.649	6	1362	.69
HV	1.582	9	1658	.11
HE*	2.185	6	1362	.04
HS	.422	3	681	.73
V* (Viewing)	8.514	9	1658	.001
E* (Encouragement)	4.778	6	1362	.001
S (Sex)	1.364	3	681	.25
H* (Home-School)	3.363	3	681	.018

*Significant at the .05 level.

Table 60

Univariate Interpretive Data, Test of V**

	F(3, 716)	p
Gain Recognition of Forms*	6.425	.001
Gain Naming Forms*	14.083	.001
Gain Matching Forms	.886	.45

*Significant at the .05 level.

**From Table 59.

Table 61

Mean Gains for Effect of Viewing from Forms Test**

	Q_1	Q_2	Q_3	Q_4
Gain Recognition of Forms	.41	.38	.69	1.10
Gain Naming Forms	.64	.86	1.28	1.83

**From Tables 59 and 60.

The next MANOVA to be reported investigated the subtests of the Numbers Test -- namely, Recognizing Numbers, Naming Number, Numerosity, Counting, and Addition and Subtraction. Table 62 presents the major analysis where these subtests were the dependent variables. No interactions were significant. Each of the four main effects was significant. Viewing, the effect of major concern in this study, was investigated by univariate analyses. Table 63 presents the univariate effects of amount of viewing. It appears that only Recognizing and Labeling Numbers were affected by amount of viewing and not Numerosity, Counting, or Addition and Subtraction. As reported in the descriptive section of this chapter (Section A), the Numerosity Test had six items, and the mean gains for the disadvantaged were, across the four viewing quartiles (from least to most viewing), .92, .92, .97, and 1.11. The high viewing group gained 1.11 over their pretest score of 4.05 so that a ceiling effect was present for this group. This ceiling effect was not manifest in the Q1 group who gained .92 from a pretest score of 2.93. This problem also occurred with respect to Counting. The ceiling problem has been discussed in detail in Part 1 of Section A of this chapter.

It is instructive to compare these children's performance on letters with their performance on numbers. While both goal areas registered significant overall gains, six of the nine subtests of the Letters Test were significant, but only two of the five Numbers subtests were significant. Both goal areas were treated similarly as far as their television presentation is concerned (see Table 34 above). Tests quite clearly paralleled the goal statements in each. The difference seems to lie in the level of attainment at which the goals were pitched. Children seemed to master at least some aspects of numbers before they

Table 62

Analysis of Subtest Effects for Gains on Numbers -

Recognizing Numbers, Naming Numbers, Numerosity, Counting, Addition and Subtraction for all Disadvantaged Children excluding Spanish Speakers.

Source of Variance	F	df_1	df_2	p
HSV	.664	18	1918	.85
HSE	1.012	12	1356	.43
EV	1.404	36	2980	.056
SV	.975	18	1918	.49
SE	1.110	12	1356	.34
HV	1.068	18	1918	.37
HE	.604	12	1356	.84
HS	.306	6	678	.93
V* (Viewing)	6.415	18	1918	.001
E* (Encouragement)	2.636	12	1356	.002
S* (Sex)	2.572	6	678	.018
H* (Home-School)	5.680	6	678	.001

*Significant at the .05 level.

Table 63

Univariate Interpretive Data, Test of V**

Score	F(3, 716)	p
Gain Recognizing Numbers*	12.050	.001
Gain Naming Numbers*	35.213	.001
Gain Numerosity	.787	.50
Gain Counting	1.461	.22
Gain Addition & Subtraction	2.278	.076

*Significant at the .05 level.

**From Table 62.

5-year-old children had much to learn in reciting the alphabet, but many of them could recite their numbers to 10 at the same age. Adding or subtracting units from small numbers, when the task was presented visually, was also within their grasp. There is a great deal of such instructive data available at the item analysis level (see Table 9 above). In short, there was no significant viewing effect for numerosity and counting, perhaps because the goals did not provide sufficient scope for the high viewing children to learn.

The next MANOVA performed on the data from the disadvantaged children investigated the three subtests of the Relational Terms Test. These were Size Terms, Postion Terms, and Amount Terms. The number of items involved were two, five, and nine respectively. Table 64 presents a summary of this MANOVA. This table indicates that no interactions were significant. A main effect for home-school was noted for size and position terms but, the question for this study is: Why was there no viewing effect found on any of the relational terms subscores?

Relational terms were taught on the program using a variety of techniques but emphasis was placed on the same ones that proved successful in teaching other goal areas -- film, people, and muppets (see Table 34). The techniques used to teach words such as through and around seemed to be somewhat effective.[1] However, some of the relational terms were ill-chosen, being too easy for disadvantaged 3- through 5-year-olds (e.g., "on", "more," "biggest," and "smallest"),

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[1] For example, "Around"

	on pretest	on posttest	gain
Q1	55%	61%	6%
Q2	62	73	11
Q3	69	83	14
Q4	71	90	19

Table 64

Analysis of Gains on Relational Terms - Size Relational Terms, Position Terms, and Amount Terms for all Disadvantaged Children excluding Spanish Speakers.

Source of Variance	F	df_1	df_2	p
HSV	.623	9	1658	.78
HSE	.612	6	1362	.72
EV	1.141	18	1927	.30
SV	1.128	9	1658	.34
SE	1.921	6	1362	.074
HV	1.095	9	1658	.36
HE	.527	6	1362	.79
HS	.577	3	681	.63
V (Viewing)	1.724	9	1658	.078
E (Encouragement)	.949	6	1362	.46
S (Sex)	1.008	3	681	.39
H* (Home-School)	5.612	3	681	.001

*Significant at the .05 level.

while most of the others, even if at a proper difficulty level, presumably were not well taught even when the television technique used was a reasonable one (e.g., "nearest" -- gain for Q1=13%, for Q2=6%, for Q3=9%, and for Q4=22%). Relational terms can be taught, because analyses of some of the items in the subtests indicate this to be true (see Table 9). But the effect of viewing was clouded sufficiently not for total score but within subtests by the presence of relational terms which were taught but already mastered by children, and by the presence of relational terms which apparently were not well taught.

The last of the MANOVA's on these data considered the subtests of the Classification Test as the dependent variables. It will be recalled that total gains on the Classification Test had earlier been shown to be significantly affected by amount of viewing (see Table 52). It would be surprising, therefore, if viewing were not again to be significant, this time considering gains on the Classification subtests as a group. Table 65 provides no grounds for surprise. There were no significant interactions, but two main effects, viewing and encouragement, were significant.

The encouragement effect is not central to this report. An examination of the relevant means indicates that the encouraged not-observed group fluctuated from highest gain on the classification by size subtest to lowest gain on the classification by form subtest. These were the two subtests that a subsequent univariate analysis found to be most influential ($p < .01$ for each) in the encouragement effect.

The effect of amount of viewing was strong and a univariate analysis was conducted to discover which subtests were significantly influenced. This analysis is reported in Table 66. The viewing

Table 65

Analysis of Subtest Effects for Gains on Classification - by Size, by Form, by Number, and by Function for all Disadvantaged Children excluding Spanish Speakers.

Effect	F	df_1	df_2	p
HSV	1.337	12	1799	.19
HSE	.431	8	1360	.90
EV	.872	24	2373	.64
SV	.237	12	1799	.99
SE	.984	8	1360	.45
HV	1.711	12	1799	.058
HE	.401	8	1360	.92
HS	.487	4	680	.74
V* (Viewing)	5.135	12	1799	.001
E* (Encouragement)	3.241	8	1360	.001
S (Sex)	1.118	4	680	.35
H (Home-school)	2.155	4	680	.073

*Significant at the .05 level.

Table 66

Univariate Interpretive Data, Test of V**

	F(3, 716)	p
Gain Classification by Size*	6.924	.001
Gain Classification by Form*	9.570	.001
Gain Classification by Number*	6.132	.001
Gain Classification by Function*	11.119	.001

*Significant at the .05 level.

**From Table 65.

Table 67

Mean Gains for Effect of Viewing from Classification Test**

	Q_1	Q_2	Q_3	Q_4
Gain Classification by Size	.08	.27	.32	.43
Gain Classification by Form	.51	.87	1.22	1.48
Gain Classification by Number	.49	.48	1.00	1.11
Gain Classification by Function	.75	1.34	1.89	2.02

**From Tables 65 and 66.

effect was clearly present in all subtests ($p < .001$) indicating a difference across the four viewing quartiles that was substantial. The educational significance of the result is, of course, a matter of subjective judgment. As a basis for this judgment, the relevant means are presented in Table 67. They were presented in greater detail in Table 11 above. The point is that gains in four subtests containing two, six, six, and nine items respectively, showed a large differential effect across the viewing quartiles.

This series of MANOVA's carried out on total test gain scores and subtest gain scores of 731 disadvantaged children indicated that amount of viewing was significantly related to gains. The greater the viewing the higher the gain. There were generally no significant interactions so that the finding applies uniformly to both boys and girls, to children who were initially encouraged to view or not encouraged to view, to children who were observed and to children who were not observed, to children who were in preschool programs, to children who viewed in their own homes, and to the various combinations of groupings that can be constructed from these categories. One qualification is that not _all_ tests and subtests were significantly affected by amount of viewing. In the list that follows asterisks indicate the tests and subtests significantly affected.

- Body Parts Total
  - Pointing to Body Parts
  - Naming Body Parts
  - Function of Body Parts (Pointing)
  - Function of Body Parts (Verbal)

- Letters Total*
  - Recognizing Letters*
  - Naming Capital Letters*
  - Naming Lower Case Letters*
  - Matching Letters in Words
  - Recognizing Letters in Words*
  - Initial Sounds
  - Reading Words*

- Forms Total*
  - Recognizing Forms*
  - Naming Forms*

- Numbers Total*
  - Recognizing Numbers*
  - Naming Numbers*
  - Numerosity
  - Counting
  - Addition and Subtraction

- Matching Subtest*

- Relational Terms Total*
  - Amount Relationships
  - Size Relationships
  - Position Relationships

- Sorting Total*

- Classification Total*
  - Classification by Size*
  - Classification by Form*
  - Classification by Number*
  - Classification by Function*

- Puzzles Total*

- Grand Total*

Thus, a substantial majority of the major goal areas and subareas, as assessed by ETS measures, seem to have been significantly affected by the amount of viewing. This result was obtained on disadvantaged children aged 3 through 5.

2. Advantaged Children

The next question for consideration was whether the results of the study of disadvantaged children could be replicated by a study of the data from the advantaged group. The data file of the children from suburban Philadelphia was used. The total number of subjects for the MANOVA was 166 (being all children for whom there were pretests, posttests, and parent questionnaires).

Table 68 presents the MANOVA where all total test gains were the dependent variables and where three factors -- amount of viewing, sex, and home-school were the independent variables. Encouragement was dropped because with a total N of 166 it was not reasonable to subdivide into as many groups as was done with the MANOVA's on the data from the disadvantaged.

It may be seen from Table 68 that none of the interactions were significant and that viewing was the only significant main effect. This parallels the results obtained on the comparable MANOVA for the diadvantaged, the only difference being that for the disadvantaged the main effect of sex was significant at the 5 per cent level as well. For the advantaged group, the results indicate that the viewing of Sesame Street had a significant positive effect, overall, in the major goal areas.

In order to discover which goal areas were significantly affected, the univariate effects were investigated. Table 69 presents the results of the analyses. The tests where gains were significant were Letters, Sorting, Puzzles, and Grand Total. It is highly instructive to look at the descriptive data from the middle class sample (see Table 24).

Table 68

Analysis of Total Gains on all Tests--Body Parts, Letters, Forms, Numbers, Sorting, Relational Terms, Classification, Puzzles, and Grand Total for Advantaged Children (N=169)

Source of Variance	F	df_1	df_2	p
SHV	.838	27	412	.70
HV	1.126	27	412	.31
SV	.969	27	412	.51
SH	.525	9	141	.85
V* (Viewing)	1.794	27	412	.010
S (Sex)	1.223	9	141	.28
H (Home-School)	1.883	9	141	.06

*Significant at the .05 level.

Table 69

Univariate Interpretive Data, Test of V**

	F(3, 149)	p
Gain Body Parts	.158	.92
Gain Letters*	6.637	.001
Gain Forms	1.872	.14
Gain Numbers	.696	.56
Gain Sorting*	2.812	.041
Gain Relational Terms	.849	.47
Gain Classification	.255	.85
Gain Puzzles*	3.183	.026
Gain Grand Total*	4.102	.008

*Significant at the .05 level.

The mean gains across viewing quartiles in the middle class seemed to reach an asymptote between Q2 and Q3. This is, the mean gain rose steeply from Q1 to Q2, only gradually from Q2 to Q3, and then seemed to remain at about that level from Q3 to Q4. If it is true that smaller amounts of watching are sufficient for advantaged children to gain from the show, then it is probably also true that for the middle class, Sesame Street would be effective with somewhat younger children as was the case in the disadvantaged community. Perhaps 2- and 3-year-old advantaged children (we only had 4-year-old advantaged children in our study) would show a more consistent monotonic relationship between gains and amount of viewing. This is entirely conjectural but it is consistent with a number of comments from mothers of 2-year-olds about the child's learning from the show and with the fact that advantaged children in Q2, Q3, and Q4 had basically achieved many of the Sesame Street goals by posttest time.

3. Age Cohorts

The final MANOVA analyzed the age cohorts described above in Section B Part 1. A full explanation of this design is presented there and will not be repeated here. Basically, cohort 1 at pretest occupied the same age range as cohort 2 at posttest. Their scores at those test times could therefore be compared to detect differences due to viewing but independent of other age-related experiences, 1Q, previous attainment, and SES. The means and standard deviations of these cohorts seemed to indicate, as one would expect if Sesame Street were effective, that there was an interaction between the cohort group and the quartile status to produce differences in test scores (see Table 45). This was the major hypothesis to be statistically tested. That is, there should have been little difference between the test scores of Q1 groups in the two cohorts since one had not seen the show much and the other could not have seen the show. There should have been substantial differences in test scores between the two Q4 groups since Q4 in Cohort 1 was yet to see the show and therefore was not affected by it but Q4 in Cohort 2 had seen the show quite frequently.

In this MANOVA the total test scores were the dependent variables (pretest for Cohort 1 and posttest for Cohort 2). The independent factors in the design were, of course, the cohorts (1 and 2), the viewing quartiles (Q1, Q2, Q3, and Q4), and age (linear, quadratic, and cubic). The major question being asked was whether an interaction effect existed between amount of viewing and cohort status. A subsidiary question was whether age in the restricted range of this particular study was related to gains and, if so, how -- linearly or curvilinearly.

Table 70 presents a summary of the MANOVA for the cohort design. There was indeed a significant interaction between amount of viewing and the two cohorts. The higher the viewing quartile the greater the difference between test scores for cohort 1 and cohort 2. Note, too, that linear age did not produce significant main effect. Thus, within this restricted six month range, age was not linearly related to gains. Two interactions were noticed. Quadradic age interacted with viewing and cubic age with cohorts. Some curvilinear functions of age therefore exist but their interpretation is obscure.

The univariate effects for the viewing by cohorts interaction are presented in Table 71. That is, Table 71 presents an analysis to answer the question: In what goal area did Sesame Street appear to be significantly effective? It may be seen that, according to the cohort design, Sesame Street significantly affected the goal areas of Letters, Numbers, Sorting, and Classification. While two of these heavily depended on association learning -- for example, naming and recognition of letters and numbers -- the other two were clearly dependent upon higher mental processes.

Table 72 presents the means (from Table 45) of the cohorts for each quartile for the four significant tests. The means indicate very clearly the effect that was hypothesized. Cohort 1 means increased from Q1 to Q4 (just as pretest means typically did across the various breakdowns). Cohort 2 means at Q1 were close to those of Cohort 1, but at Q4 the differences were very marked.

Table 70

Multivariate Analysis of the Cohorts Study

Dependent Variables: Pretest or Posttest, Total Scores on Body Parts, Letters, Forms, Numbers, Sorting, Relational Terms, Classification and Puzzles.

Source of Variance	F	df_1	df_2	p
$VA_1C+VA_2C+VA_3C$	.800	21	494	.72
A_3C*	2.137	7	172	.042
A_2C	1.728	7	172	.11
A_1C	1.236	7	172	.28
VC*	3.354	7	172	.002
VA_3	1.305	7	172	.25
VA_2*	2.309	7	172	.028
VA_1	.859	7	172	.54
C (Cohorts)		Not Applicable		
A_3 (Cubic Age)	1.362	7	172	.22
A_2 (Quadratic Age)		Not Applicable		
A_1 (Linear Age)	1.119	7	172	.35
V (Viewing)		Not Applicable		

*Significant at the .05 level.

Table 71

Univariate Effects for the Viewing - Cohort Interaction

Test	F(1, 178)	p
Body Parts	.199	.65
Letters*	17.499	.001
Forms	1.831	.18
Numbers*	7.665	.006
Sorting*	7.154	.008
Classification*	3.823	.050
Puzzles	.687	.41

*Significant at the .05 level.

Table 72

Means of Viewing Quartiles
Within Cohorts for Significant Tests

Test	Cohort	Q_1	Q_2	Q_3	Q_4
Letters	Cohort 1*	14.06	13.09	14.81	18.52
(58 Items)	Cohort 2*	14.65	18.24	26.83	31.92
Numbers	Cohort 1	16.77	17.97	20.37	23.96
(54 Items)	Cohort 2	19.00	23.76	32.67	35.54
Sorting	Cohort 1	2.13	1.67	2.81	2.30
(6 Items)	Cohort 2	2.69	3.33	4.28	4.54
Classification	Cohort 1	10.71	11.03	12.89	13.04
(24 Items)	Cohort 2	11.96	13.79	17.78	17.75

*Cohort 1 53-58 months at pretest - Pretest means presented.
Cohort 2 53-58 months at posttest - Posttest means presented.

This section of the results chapter has attempted to present some major statistical analyses of the data taken from the descriptive and probing sections. The effects of viewing were so obvious in the descriptive data that some of the analyses might have been thought to be unnecessary gilding. What was no less obvious, but much more difficult to deal with, was the confounding of high viewing with other factors conducive to learning such as high pretest levels, educationally concerned parents, and parental affluence. The age cohorts design "matched" children not only by age but also by home background. It was clear from the age cohort analysis that high levels of viewing of Sesame Street brought about gains in the major goal areas. Thus, the success of Sesame Street, in terms of its major goals and within the target groups of children that were of most concern, is well documented.

CHAPTER IV. SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

A. Summary of Project Activities

The evaluation study described in these pages has attempted to answer six major questions: First, what overall was the impact of Sesame Street? Second, what were the moderating effects of age, sex, former achievement, and SES on the impact of Sesame Street? Third, did children at home watching Sesame Street benefit in comparison with children at home who did not watch? Fourth, did children in preschool classrooms benefit from watching Sesame Street as part of their school curriculum? Fifth, did children from Spanish-speaking homes benefit from Sesame Street? And finally, what were the effects of home background conditions on the impact of Sesame Street?

To answer these questions, groups of preschool-aged children were identified for study in five different locales in the United States. The major populations of children sampled were disadvantaged children from inner-city areas, advantaged children from a suburban area, advantaged and disadvantaged children from a rural area, and disadvantaged, Spanish-speaking children. Some were at home and some attended school. The sites chosen were areas served by VHF television stations with sizeable groupings of one or more of the populations described above. Boston, Massachusetts; Durham, North Carolina; Phoenix, Arizona; suburban Philadelphia; and northeastern California were the five places finally chosen to be included in the study.

In each site, the cooperation of the local community was required in order for the study to proceed. Once cooperation had been secured (by means appropriate to the particular site), a local coordinator was hired and the actual sampling was begun.

Sampling in Boston, Durham, and Phoenix was conducted in areas of greatest poverty and in neighborhoods around Head Start Centers.[1] Once the requisite number of classrooms to fill the needs of the sample had been found, classes were identified either as viewing or nonviewing groups. Each viewing classroom was provided with two black and white TV sets. The at-home children in the same neighborhoods were obtained by means of a house-to-house survey aimed at identifying all children from 3 to 5 who were not in school. Following the survey, children from entire blocks of houses were assigned randomly to become viewing or nonviewing groups. About two-thirds of the children at home were included in the viewing or encouraged group.

The sampling procedures in Philadelphia and California varied somewhat from the procedures in Boston, Phoenix, and Durham. The Philadelphia group was primarily suburban and middle-class, and the California group was mainly rural and disadvantaged. Overall, the sample of about 1,200 children chosen for the study included slightly more boys than girls. There was a preponderance of lower-class over middle-class children; more of the disadvantaged were black than white; most of the children were 4 years old (some were 3 and some were 5); and more of the children were at home rather than at school.

The sampling and testing were conducted by local people, usually residents of the target areas. They were recruited by the local coordinators and trained in the sampling and testing procedures by ETS staff. They were subsequently supervised by local coordinators who were in frequent communication with the ETS project staff in Princeton.

A variety of measuring instruments was used in the evaluation, all but one of them developed specifically for use in this study. The test battery included nine separate tests at pretest time, and was revised and expanded to include 11 tests for the posttest. Tests were designed for individual administration by a trained adult and were administered in the child's home or school, usually in three separate sessions. All of the tests followed the same basic format, designed to minimize the need for verbalization by the child. The test materials were simple and were designed to measure the major educational goals of Sesame Street as well as transfer of learning effects. The pretest battery took an average of two hours to administer, and all but eight children were able to complete the entire battery. The posttest took less time. Included in the pretest battery was the Peabody Picture Vocabulary Test which was given so that the scores could be used as a moderator variable and also so that the Sesame Street sample could be compared with other groups of children. The posttest battery represented somewhat revised forms of some of the pretests (revised in light of test and item analyses) and new tests covering the problem-solving goal area. An additional test assessed the child's familiarity with Sesame Street and was used as one part of a viewing index to assess the amount the children had watched the show.

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[1] See Appendix I.

A Parent Questionnaire was devised for the purpose of learning something about the home backgrounds of the children in the study. Descriptive data were collected on various aspects of family life, home climate, parental aspirations, and TV viewing preferences. An index of SES was also obtained for each child from the Parent Questionnaire based on the level of education of the parents. Parents were paid to fill out a questionnaire both at pretest and posttest time. The Posttest Parent Questionnaire included questions about the child's TV viewing habits in general and about his Sesame Street viewing habits in particular. Responses to these questions were a second source of information for the viewing index.

For all children encouraged to watch Sesame Street at home or at school, mothers or teachers filled out daily reports on how much their children actually watched the show. These viewing sheets were a third source of information on which the viewing index was based. Finally, mothers were asked once a month to indicate on a TV guide the shows their children had watched on the previous day. The scores for each of the four measures were combined and weighted for a total viewing index.

Children in the at-home encouraged group of the sample were observed watching the show by ETS observers once each week. Children in some classrooms were also observed but less frequently. The observers noted the children's visual, verbal, and motor responses to selected segments of the show and to selected characters and techniques of presentation.

A content analysis of Sesame Street was performed throughout the six months of the show by ETS staff in the Princeton office. A short interview was developed to find out whether (and how) mothers of at-home children used the Sesame Street Parent-Teacher Guide. A questionnaire was given to teachers whose classrooms were encouraged to view in order to learn how the show was used in each classroom. Altogether, ten separate sources of data were utilized in the eight months of data collection.

As the data were collected throughout the year, they were checked by the local coordinator, mailed at regular intervals to the ETS Princeton office, rechecked, keypunched, and prepared for analysis. Analytical procedures had been devised by the project director in consultation with ETS experts in statistical analysis and computer operations. The results represent many man- and machine-hours and a variety of statistical procedures.

B. Summary of Results

When all of the data had been collected and analyzed, there were 943 children for whom complete pretest and posttest data were available. The total group was then divided into quartiles according to how much the children watched Sesame Street during the first six month season. All subsequent analyses were performed using the total group or subgroups of these children divided into the viewing quartiles. The quartiles ranged from Q1, in which children watched Sesame Street rarely or never, through Q4, in which children watched Sesame Street an average of more than five times a week.

In the total group of children, over all of the tests, those in the higher viewing quartiles performed better than children in the lower viewing quartiles. Pretest scores, posttest scores, and gain scores were all highest for children in Q4. Thus, in terms of the pretest, the children who watched most were more able to start with. They also did best on the posttest, and gained most from pretest to posttest.

This general tendency was apparent to a greater extent in some goal areas than in others. For the Body Parts Test, for example, results were consistently high at the time of pretest (over 50 percent of the maximum possible score), thus limiting the possibilities for gain. Although there were differences among the quartiles in the Body Parts posttest, with the children in the highest viewing quartiles gaining most, the differences were not statistically significant. In the

Letters Test, on the other hand, gains were significant and highly encouraging. These gains varied directly with amount of viewing. The largest gains were made in the items dealing with capital letters and vowels, both of which also had the greatest exposure among the letters in terms of number of days which were devoted to them on the show. For all of the eight major tests and almost all of the subtests, this same relationship appeared over and over again. The children who watched most gained most. This relationship appeared for all subgroups of children studied.

Data from the Parent Questionnaires were examined for evidence of possible background correlates of viewing behavior. The amount of viewing among the 943 children was clearly related to their parents' scores on the Parent Expectation Index, a composite of several items that asked parents about their achievement expectations for their children. Viewing behavior was also positively related to the children's own level of affluence, that is, how many things the children themselves owned. High pretest scores were associated with positive educational climates in the children's environments as measured by an index of Educational Uses.

Disadvantaged Children

Of the total 943 children, 741 were from disadvantaged backgrounds as determined by both traditional and functional SES characteristics. These children came mainly from Boston, Durham, and Phoenix. They tended to watch less on the average than the total group, but for them, as for the total group, gain scores were directly related to the amount they had viewed. In terms of the grand total score of the 203 items common to pretest and posttest, Q1 children gained 18.63 points; Q2 children gained

29.11points; Q3 children gained 37.97 points; and Q4 children gained 47.36 points from pretest to posttest. The same sort of relationship was observed among all of the eight separate test scores.

Disadvantaged Children Subdivided by Age

There were 127 3-year-olds, 433 4-year-olds, and 159 5-year-olds, a distribution which reflects the fact that the central target of Sesame Street and of this evaluation was the four-year-old. Age breakdowns of the data indicate that the amount of viewing did not vary markedly with age. Test scores, however, did vary with age. Among children with relatively similar amounts of viewing, younger children gained considerably more on the total test score than older children. Three-year-olds who viewed most gained more than the other age groups, and 3-year-oldswho viewed an average of only two or three times a week also gained a great deal compared with other children viewing similar amounts. Some individual test results were clearly related to age. Among high viewers, the largest gains on the Body Parts Test were made by three-year-olds; four-year-olds did better than other age groups in Numbers; and five-year-olds showed higher gains than other age groups in Reading Words (an indicator of transfer of learning) and in Initial Sounds.

At the time of the pretest, as might have been predicted, 3-year-olds did less well than 4-year-olds, and 4-year-olds did less well than 5-year-olds. In terms of gains, the results were reversed: 3-year-olds gained more than 4-year-olds who, in turn, gained more than 5-year-olds in the highest viewing quartiles. This was not due to test ceiling effects but to the fact that most of the content of the show could be and was learned by the 3-year-old children who viewed. Interestingly, the highest viewing 3-year-old group started out with lower mean scores than any 5-year-old group and with the same or lower mean scores than any 4-year-old group. By the time of the posttest, the same high viewing 3-year-old group had scored higher on the average than 4-year-olds in Q1, Q2, and Q3, and also higher than 5-year-olds in Q1 and Q2. Even the 3-year-olds in Q2 made sizeable gains, indicating clearly that even moderate viewing produced noticeable effects among the youngest children in our sample.

Disadvantaged Children Grouped by Sex

There were 377 disadvantaged boys and 354 disadvantaged girls in the total sample.

Both sexes watched Sesame Street about the same amount. Girls seemed to gain a little more than boys from pretest to posttest in a few goal areas, but girls also knew slightly more at the time of the pretest. For both sexes, gains in test scores were proportional to the amount of viewing. Q3 and Q4 boys gained as much as Q3 and Q4 girls. It is useful to note that this runs counter to most traditional educational programs where girls usually gain considerably more than boys.

The mental ages of the sexes were comparable to start with, and the two groups were similar in most background variables. The only major difference between them was in the amount of education of the parents where, for some unknown reason, the girls' parents scored three months higher on the average.

Disadvantaged, At-Home Children

Disadvantaged, at-home children scored lower at the time of pretest than disadvantaged children who were at school. However, the highest viewing quartile in this group gained more from pretest to posttest in the grand total score than most other subgroups of children. Gains for almost all of the tests were proportional to viewing.

The at-home children who were not encouraged to view Sesame Street were among the lowest viewers in the entire study. About fifty percent of them were in Q1, and about half of those children had never seen the show.

Disadvantaged, At-School Children

There were 342 children in Head Start classrooms who were part of this study, 171 in encouraged classrooms and 171 in classrooms which did not receive encouragement in the form of television sets. As with at-home children, gain scores were positively associated with amount of viewing. The biggest differences occurred between Q1 and Q2 children, (as opposed to at-home children for whom the biggest differences occurred between Q3 and Q4). Thus, moderate amounts of viewing appeared to be more effective for at-school than for at-home children.

Advantaged Children

There were 169 children in the study who were considered advantaged, all of them from suburban Philadelphia. These children watched more of the show on the average than any of the groups of disadvantaged children. As expected, they scored higher on the pretest than any other children in the study. Their mental ages were also the highest of any subgroup. Among the advantaged, children in all viewing quartiles made significant gains from pretest to posttest, and those who viewed more of the show gained more. The biggest difference in gains for the advantaged group was between Q1 and Q2, indicating that relatively small amounts of viewing produced relatively large gains in this sub-sample. However, and most importantly, gains of high viewing (Q4) advantaged children were somewhat less than gains of high viewing disadvantaged children. In addition, advantaged children who watched little or none of the show (Q1 and Q2) were surpassed at posttest time by disadvantaged children who watched a lot. Thus, in terms of attainments, Sesame Street helped to close the gap between advantaged and disadvantaged children.

Spanish-speaking Children

There were 43 children in Phoenix who were included in the study on the basis of the fact that they came from primarily Spanish-speaking homes. In fact, there was considerable variation among them in their language background and in the degree to which they had been exposed to English prior to their watching Sesame Street. Given this variability and the small size of the groups, conclusions must be drawn with great care. Nonetheless, the results among these children were among the most spectacular observed in the study.

The largest concentration of Spanish-speaking children was in Q1 and Q2 leaving only 18 in the two higher-viewing groups. Nonetheless, the children in Q3 and Q4 made extremely large gains. In fact the gains among Q3 Spanish-speaking children were as high as those for Q4 children in the rest of the study. In the Letters Test, the Q4 Spanish-speaking children pretested lowest of almost all subgroups studied and scored highest at the time of the posttest. Also, Letters subtests and tests of Numbers, Forms, Sorting, Relational Terms, and Classification showed the same low start and subsequent high gains for the Spanish-speaking children who viewed most. The phenomenon of Sesame Street among children with Spanish-speaking backgrounds deserves to be studied more extensively than this study was able to do.

Rural Children.

There were an additional 61 children living in a rural area of northeastern California who were included in the study in an effort to learn something about the effectiveness of Sesame Street for children in sparsely populated areas. These children were identified as disadvantaged by local educators, but parent questionnaire data revealed that some of them were advantaged in ways that the other disadvantaged children in the study were not. Over one-third of the rural children were in Q1, placing them among the lowest viewers in the total sample. For all quartiles, gains were higher for the rural children than for the total sample of 943. Again, the gains varied directly with amount of viewing. Interestingly, the mental ages of the rural children were somewhat higher than other groups in the evaluation, yet most of these children were initially disadvantaged with respect to the goals of Sesame Street. Sesame Street functioned to reduce the educational isolation of the rural children who viewed regularly.

Content Analysis and Observations.

A content analysis of Sesame Street was performed by ETS staff members in order to provide a description of the actual output of the show that would be independent of the intentions of the CTW staff. The content analysis revealed that the CTW goal areas receiving most attention (in terms of actual time devoted to them on the show) were naming letters, initial sounds, recitation of numbers, problem sensitivity, evaluating solutions, body parts, expressing emotions, machines, and plants and animals. The content analysis also indicated which techniques were used to present which goals. The results are particulary interesting when examined in connection with observation data.

Observation data were collected by ETS observers who recorded children's visual, verbal, and motor reactions to selected segments of Sesame Street. Characters and various production techniques were examined in an effort to discover which were most attractive to the children. The main finding was that visual attentiveness to all characters and production techniques was very high among all groups of children and that differences were very slight. The most popular characters in terms of the observation records were Ernie, Gordon when he appeared with the Muppets, Susan when she appeared with Big Bird, and the various visiting stars. The popularity of the various characters seemed to have been mediated somewhat by the ages of the children and their social class backgrounds, but not by their sex. Animals inspired the least amount of interest among all children.

Among the production techniques analyzed, music and animation were very effective in holding the interest of the children observed. Content analysis revealed that animation was used mainly in the goal areas of naming and reciting letters and numbers and geometric forms. These were also areas in which gains were quite high. These and many other interesting juxtapositions of the data can be made by the reader. Again, slight age and class differences were noted in the children's responses to various production techniques.

Teacher Questionnaire and Parent-Teacher Guide Interview

The teachers whose classes watched Sesame Street as part of the study were given questionnaires to assess their reactions to the use of the show in their classrooms. The teachers all admired Sesame Street for its appropriatness and effectiveness as a means of teaching young children. They singled out the Muppets for special praise and felt that the teaching of numbers and letters was particularly effective. The one major area in which the teachers disagreed among themselves was in their assessment of the appropriateness of Sesame Street for use in the classroom. Some felt strongly that the show took up valuable class time that could better be devoted to other activities; others felt the show to be a worthwhile addition to the classroom schedule.

Mothers of encouraged at-home children were interviewed to learn the impact of the Sesame Street Parent Teacher Guide in their homes. Less than half of the mothers polled used the guide and only 22 percent of them used it to find out what was being taught on the show. It was concluded that the guide had relatively little effect on the Sesame Street viewing experience.

Probing Analyses

The results summarized thus far have been descriptive in nature and have involved large breakdowns of the total sample of 943 children. In addition to the descriptive data, two sets of probing analyses were performed to provide answers to questions of a more complex nature.

The Age Cohorts Study attempted to disentangle the effects of viewing from previous achievement, IQ, and home background among the children. This analysis compared the pretest scores of one group of children (those who were between 53 and 58 months of age at the time of pretest) with the posttest scores of a totally different group of children (those who were between 53 and 58 months at the time of posttest). Only at-home children from disadvantaged areas were included in this analysis. There were 114 children in group 1 (the pretest group) and 101 in group 2 (the posttest group); both groups were divided into viewing quartiles. These manipulations provided two groups of children who were similar in terms of background and age and whose pretest and posttest scores could be compared while holding the effects of maturation constant. Parent questionnaires for the two groups were compared to rule out possible systematic differences in background; there were none. For high viewers, (the children in Q3 and Q4), the mean total score for 203 common items was about 40 points higher for group 2 (the posttest group) than for group 1 (the pretest group). For the children in the low viewing quartiles, the difference was less than 12 points. The same phenomenon was observed in almost all of the subtests. Children in group 2 who viewed Sesame Street most scored much higher than comparable children in group 1, indicating quite clearly the effect that viewing had on gain scores.

A second probing analysis compared high learners and low learners among the disadvantaged, at-home children in the study who viewed

Sesame Street most. The analysis was designed to investigate the question of what differentiates the children who learned most from those who learned least. All 943 children were divided into high and low learners on the basis of gains on the total test score. Of the 78 disadvantaged at-home children who were high viewers, 43 were in the top quartile with respect to total score gains (high learners) and 11 were in the bottom quartile (low learners). A comparison of PPVT scores indicated no significant difference between high and low learners in terms of mean mental age. The only observable differences were in certain areas of home background measured by the parent questionnaire. The mothers of high learners talked with their children about Sesame Street to a significantly greater extent than did the mothers of low learners. To a less noticeable extent, certain SES variables differentiated the two groups. The high learners' parents were slightly better educated than the low learners' parents. The high learners themselves were slightly more affluent than the low learners. Finally, the low learners' parents seemed less optimistic about their schools and their children's teachers than the parents of high learners. The results of this analysis were inconclusive because of the small and unequal numbers in the two groups and the relatively small size of even the noticeable differences between the groups.

Inferential Analyses

The data collected in the study were finally subjected to statistical treatments mainly in an effort to learn whether the high gains made by frequent viewers of the show and the low gains made by infrequent viewers of the show could have occurred by chance. The statistical technique used was MANOVA (multivariate analysis of variance), and simple gain scores were used throughout.

A MANOVA performed on the data of all the 731 disadvantaged children had four independent variables -- the amount of viewing, the status of being encouraged or not-encouraged, sex, and the at-home or at-school factor. The dependent variables were gains on the eight total test scores and the grand total score. None of the interactions among independent variables were found to be significant. As might have been anticipated, amount of viewing was significant. That is, amount of viewing affected positively the gains obtained, and this was true for all the subgroups of the disadvantaged entered in the analysis -- at-home, at-school, boys, girls, encouraged, not-encouraged, and combinations of these subgroups.

All of the dependent variables except the Body Parts Test and the Relational Terms Test were significantly affected by amount of viewing. Thus, positive effects of viewing Sesame Street were found to be statistically significant and consistent among almost all of the goal areas tested for. The main effects of home-school, sex, and encouragement were also significant. Subsequent analyses indicated that though statistically significant, these main effects were not particularly important for this study. The evaluation was more concerned with the interaction of viewing with these factors rather than their main effects.

Further MANOVA's were conducted using the same data pool but entering gains on the subtests as dependent variables rather than gains on the total test scores. From these and the first MANOVA run it was noted that viewing Sesame Street positively affected gains on the following tests and subtests:

Letters Total: Recognizing Letters; Naming Capital Letters; Naming Lower Case Letters; Recognizing Letters in Words; Reading Words

Forms Total: Recognizing Forms; Naming Forms

Numbers Total: Recognizing Numbers; Naming Numbers

Matching Subtest

Sorting

Classification Total: Classification by size; by form; by number; by function

Puzzles Total

Grand Total

A MANOVA was performed on data from the 169 advantaged children in the study using the same independent and dependent variables. Again there was no significant interaction effect among independent variables. For the advantaged children, amount of viewing was again seen to be the major important factor affecting the gain scores. The tests for which viewing produced significant gains were Letters, Sorting, and Puzzles. The Grand Total again was also related significantly to amount of viewing for the advantaged children.

Finally, a MANOVA was performed for the two disadvantaged groups that comprised the age cohorts study. For these groups, viewing again made the difference. The tests for which gain scores were significant were Letters, Numbers, Sorting, and Classification. The implications of this study are most important. It provided a rigorous control of previous achievement, I Q , and home background factors and allowed the effects of viewing to be assessed without these confoundings. The results were very clear. Children who viewed learned. This learning could not be attributed to the effects of normal growth, I.Q., previous achievement, or SES. Further, the learning occurred in both simple but educationally important tasks and in tasks requiring complex, congnitive activity.

C. Conclusions

The evaluation activities were aimed at finding out whether Sesame Street was successful in terms of its own goals (See Appendix A). There was also an attempt made to see if transfer effects and side effects occurred. That is we wanted to know whether the teaching in the goal areas was successful, whether there was transfer of these learnings to other areas not directly taught, and whether the program content had created such side effects as changes in the children's home environment.

With this principle in mind, the questions that were the focus of this evaluation will now be answered.

Q. What, overall was the impact of Sesame Street?

A. The impact in most goal areas was both educationally and statistically significant. Children who viewed Sesame Street achieved many of the stated goals in letters, numbers, and forms, and they gained appreciably in their skill in sorting and classifying. Transfer of learning was noted in some instances but basically the large gains occurred in those areas that were directly taught. There was no evidence of side effects during the six months of the show.

Q. What were the moderating effects of age, sex, former achievement, and SES on the impact of Sesame Street?

A. Children from 3- through 5-years-old all benefited from Sesame Street. Gains of 5-year-olds were generally less than gains of 3-year-olds. This was partly a function of the fact that 3-year-olds started with less knowledge in the goal areas but seemed equally adept at learning the content presented. This overall conclusion that younger children seemed to be as much or more suited to the show does not seem to be a measurement artifact.* Goal areas that were indirectly taught (for example, initial sounds) seem to have been better learned by many older viewers. As well, transfer of learning was more apparent in the older than in the younger children. Generally, where specific knowledge and skills were directly taught on Sesame Street, younger children gained more than older children. As a result, 3-year-old children who viewed the show a great deal had, at posttest, higher attainments than 4-year-olds or 5-year-olds who viewed the show less.

The moderating effects of sex were harder to interpret. Girls tended to have higher pretest scores and, in a few test areas, they gained more. However, overall, the differences between gains of girls and boys even when statistically significant, did not appear to be educationally significant. Amount of viewing did not interact with sex. That is, girls at each viewing level did not gain differentially more or less than boys at that level. Sesame Street seemed to be equally attractive to boys and to girls in terms of frequency of viewing.

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*Over a restricted range of six months (see the Age Cohorts Study above) age -- linear, quardratic, and cubic -- was not a significant factor. However, the remarks in this summary are based on the 36-month age range of the total sample.

Prior achievement level was confounded with amount of viewing. When prior achievement was kept constant, it was noted that viewing Sesame Street was instrumental in achieving significant gains. This, of course, does not answer the question -- it does not tell what would happen if the initial levels of attainment were systematically varied. In general, high viewers with low prior achievement gained more rather than less because there was more for them to gain. Since most test items were directly related to the show's goals, children with high levels of prior achievement were less able to benefit from the show -- they already knew much of what was presented. Older children and educationally more advanced children showed highest gains over pretest levels when watching the show only a few times a week. Children who had low prior achievement levels gained most from watching the show daily. However, children with high prior achievement levels were able to learn in goal areas that were taught indirectly and were better able to transfer the knowledge they did gain.

SES as a moderating variable was closely allied to prior achievement levels. Generally speaking, the conclusions reached in the previous paragraph could as well be presented here, too. Though the show benefited both disadvantaged and advantaged children, a possibly important factor seemed to be the mother's behavior with the children. Children who watched and learned more came from homes where Sesame Street was watched by both mother and child and where the mother talked with the child about the show. It would seem that such behaviors had more important moderating effects on gains than the more traditional SES factors such as place of residence. It should be carefully noted that children with low SES indices who viewed a great deal of the show had lower attainment at pretest than high SES children who did not view. But at posttest, the low SES children had surpassed the low-viewing higher SES children.

Q. Did children at home watching Sesame Street benefit in comparison with children at home who did not watch?

A. High viewers far surpassed low viewers. In fact children at home in disadvantaged communities watching Sesame Street gained as much as, or far more than, was initially expected -- in some goal areas they gained more than children from the same communities who attended preschool. Extreme care must be taken in interpretation because the tests were used to assess the effects of Sesame Street and the children in school were learning in areas not tested for in this study. The point that is being made here is that children who viewed in their own homes were at no disadvantage in comparison to those viewing in a peer group environment under the supervision of a teacher. Sesame Street, educationally speaking, did not require adjunct professional helpers in order that the viewing child could benefit.

Q. Did children in preschool classrooms benefit from watching Sesame Street as part of their school curriculum?

A. Yes, they did benefit. At school, amount of viewing was clearly related to amount of gain. They seemed to gain with moderate amounts of viewing. That is, the gains were greater the more the viewing, but the rate of gain began to decline with high amounts of viewing. Teachers in the sampled classrooms liked Sesame Street and, with some reservations, thought that it was a useful addition to the day-long preschool curriculum, an expectation substantiated by this study.

Q. Did children from Spanish-speaking homes benefit from Sesame Street?

A. There were only 43 children in the sample who were from Spanish-speaking homes. Therefore, the answer to this question is cautiously given. If the observed results had been obtained on a larger group then there would be grounds for educational rejoicing. Preschool-aged, Spanish-speaking children who were heavy viewers of Sesame Street were quite low in pretest attainments -- lower than any of the other groups in the study. At posttest, those who watched the show very frequently were higher in attainments than any other subgroup of children except a relatively high SES rural group. That is, high viewing Spanish-speaking children from a disadvantaged community and with low SES indices gained more than virtually any other group, surpassing at posttest even the high-viewing advantaged children. Further study is essential since programs like Sesame Street may prove to be of great benefit to children for whom English is not the native language.

Q. What were the effects of home background conditions on the impact of Sesame Street?

A. It is clear that heavy viewers of Sesame Street tended to come from homes where mothers spent more time watching and talking about the show with their children. This is not to say that such home background activities are necessary or even conducive to learning -- merely that they were correlated with amount of viewing. One study attempted to ascertain the background characteristics of high and low learners keeping amount of viewing constant. This study was inconclusive. No systematic differences in home backgrounds were noticeable.

In summary, we have seen that Sesame Street was a particularly effective educational program that benefited children from ghetto communities, middle class suburbs, and isolated rural areas. It achieved most of its goals and in at least three areas -- body parts, matching, and relational terms -- its success was attenuated by the pre-broadcast assumption that the children's knowledge and skills were lower in these areas than in fact they were. Sesame Street achieved high audience appeal in its first year. It is satisfying to know that this appeal was associated with excellent educational impact.

* * * * *

Educational researchers typically have been the historians of educational policy and practice. Rarely has their work been used to modify or change what is happening. Usually it serves as a slightly esoteric monument to the educational issues and problems of the time. It would be shameful if the implications of this report were to be ignored.

From this evaluation of Sesame Street, television has been shown to work extremely well as a teaching medium. It achieved this result not only in learnings that involve simple association (for example, naming letters) but also in learnings that involve complex cognitive processes (sorting and classifying), and even verbalization of these processes. In open competition with other television shows, it achieved this result through a program that attracted and held the attention of the viewers. It achieved this result with 3- through 5-year-old children from many different backgrounds despite the enormous problems that measurement and field operations posed.

In general, Sesame Street achieved its goals. They were important goals. Since this experimental television program for preschoolers was so successful, it would be a travesty of responsible educational policy making were not more, similarly-conceived television programs funded, developed, researched, and presented.

Appendix A

THE GOALS OF SESAME STREET

The Instructional Goals of Children's Television Workshop

BACKGROUND

As the initial step toward the establishment of its goals, Children's Television Workshop (CTW) organized a series of five three-day seminars during the summer of 1968, dealing with the following topics: (1) Social, Moral and Affective Development; (2) Language and Reading; (3) Mathematical and Numerical Skills; (4) Reasoning and Problem Solving; and (5) Perception. Representatives from a variety of fields attended these seminars, including psychologists, teachers, sociologists, filmmakers, writers of children's books, and creative advertising people, along with various other materials, served as the basis for a special meeting on setting priorities among goals, held September 23 and 24, 1968. Results were summarized in an earlier report entitled "Appendix I. Goals Meeting, Children's Television Workshop." The present statement of goals incorporates, extends, and supersedes that earlier report.

PURPOSES

This report is intended to serve various related purposes. First, it attempts to reflect with reasonable accuracy the suggestions of the many consultants to the project. Secondly, it attempts to provide a framework within which to organize the project's goals. Briefly, these now fall into the three large categories of (1) Symbolic Representation, (2) Problem Solving and Reasoning, and (3) Familiarity with the Physical and Social Environments. Thirdly, it proposes a limited set of priority objectives, toward which the CTW experiment, and therefore its production resources, should be especially directed. Fourthly, in addition to general statements of goals and goal categories, it provides a number of specific operational examples, which will hopefully provide further clarification for the members of the production staff. Fifthly, it will serve as a common reference for the production and the summative evaluation phases of the project, reflecting the necessity for maintaining a coordinated relationship between the two. Finally, the report should be useful in communicating with our sponsors, our advisors and consultants, and the general public.

INTERPRETIVE GUIDELINES

The following observations may clarify the attached statement of goals:

I. Experimental Nature of the Project

Children's Television Workshop is an experiment in the instruction of preschool children through the medium of broadcast television. Accordingly, we have not attempted to restrict our goals to those which may be achieved with certainty. In general, the objective is to learn whether (or to what extent) the priority goals defined here may be within the capability of broadcast television to achieve.

II. Overlapping of Goal Categories

Presenting a listing of goals may imply that each goal is considered (1) singly, in isolation from the others, and (2) as belonging to one goal category alone. We do not intend that the list be regarded in these ways. Rather, the goal categories clearly are overlapping, and there are many cases in which a specific goal has been placed under one heading when it could have been placed under another. For instance, certain goals under "Numbers," "Letters," or "Classification" could well have been placed under "Perceptual Discrimination."

III. Goal Priorities

The goals fall into two major sets in terms of priorities. The first set consists of those objectives presently seen as the primary instructional goals of CTW. Each of these is marked by an asterisk. Those goals not preceded by an asterisk may be dealt with somewhere in the program, but it is not anticipated that they necessarily will be the subjects of concentrated production efforts. The follow-up, or summative evaluation, will focus predominantly upon the higher-priority goals, and will include the measurement of the remaining goals only to the extent that the programs as produced appear to be capable of achieving them.

IV. Measurement Plans

Two main forms of follow-up evaluation will measure the extent to which the instructional objectives of CTW have been met:

(1) Exposing the children to limited program segments prior to and perhaps during the broadcast period under highly controlled or "optimal" viewing conditions, and measuring the immediate, short-term, program-specific achievements which may result.

(2) A nation-wide evaluation of the program's effectiveness to be carried out by Educational Testing Service of Princeton, New Jersey, following a design yet to be determined, but one which will probably emphasize "typical" conditions of broadcast

viewing, the evaluation of long-term gains, and the use of standardized instruments.

I. Symbolic Representation

The child can recognize such basic symbols as letters, numbers, and geometric forms, and can perform rudimentary operations with these symbols.

A. Letters

(Note: For most of the following goals, the training will focus only upon a limited number of letters. The entire alphabet will be involved only in connection with recitation.)

* 1. Given a set of symbols, either all letters or all numbers, the child knows whether those symbols are used in reading or in counting.
* 2. Given a printed letter the child can select the identical letter from a set of printed letters.
* 3. Given a printed letter the child can select its other case version from a set of printed letters.
* 4. Given a verbal label for certain letters the child can select the appropriate letter from a set of printed letters.
* 5. Given a printed letter the child can provide the verbal label.
6. Given a series of words presented orally, all beginning with the same letter, the child can make up another word or pick another word starting with the same letter.
7. Given a spoken letter the child can select a set of pictures or objects beginning with that letter.
8. The child can recite the alphabet.

B. Numbers

* 1. Given a printed numeral the child can select the identical printed numeral from a set.
* 2. Given a spoken numeral between 1 and 10 the child can select the appropriate numeral from a set of printed numerals.
* 3. Given a printed numeral between 1 and 10 the child can provide the verbal label.
* 4. Given two unequal sets of objects each containing up to five members the child can select a set that contains the number requested by the examiner.
Ex. Where are there two pennies?
* 5. Given a set of objects the child can define a subset containing up to 10.
Ex. Here are some pennies. Give me two.

* 6. Given an ordered set of up to four objects the child can select one by its ordinal position.
  Ex. Where is the third book?
* 7. The child can count to 10.
  8. The child can count to 20.
  9. The child understands that the number system extends beyond those he has learned, and that larger numbers are used to count larger numbers of objects.

C. Geometric Forms
  1. Given a drawing or a cut-out of a circle, square, or triangle, the child can select a matching drawing, cut-out, or object from a set.
  2. Given the verbal label, "circle," "square," or "triangle," the child can select the appropriate drawing, cut-out, or object from a set.

II. Cognitive Processes

The child can deal with objects and events in terms of certain concepts of order, classification, and relationship; he can apply certain basic reasoning skills; and he possesses certain attitudes conducive to effective inquiry and problem solving.

A. Perceptual Discrimination
* 1. Body Percepts
  The child can identify and label such body parts as elbow, knee, lips, and tongue.
  2. Visual Discrimination
     a. The child can match a given object or picture to one of a varied set of objects or pictures which is similar in form, size, or position.
     b. Given a form the child can find its counterpart embedded in a picture or drawing.
        Ex. Given a circle the child can find the same shape in the wheels of a car. (This could be done with letters and numbers as well.)
     c. The child can structure parts into a meaningful whole.
        Ex. 1. Using modeling clay and beans the child can fashion a head.
        Ex. 2. Given two triangles and a model the child can construct a square.
        Ex. 3. Looking at a picture of children with presents and a cake with candles the child can describe the picture as a birthday party.
* 3. Auditory Discrimination
     a. Initial Sounds
        The child can match words on the basis of common initial sounds. (see I. A., numbers 6 and 7, above)
     b. Rhymes
        The child can match words on the basis of rhyming.
        Ex. Given two or more words that rhyme the child can pick or supply a third

c. Sound Identification
The child can associate given sounds with familiar objects or animals.
Ex. Car horn, wood saw, moo of a cow

d. Copying Rhythms
The child can copy a rhythmic pattern.

B. Relational Concepts

* 1. Size Relationships
Ex. Big, bigger, biggest; short, tall; skinny, little; etc.

* 2. Positional Relationships
Ex. Under, over, on top of, below, above, beneath, etc.

* 3. Distance Relationships
Ex. Near, far away, close to, next to, etc.

* 4. Amount or Number Relationships
Ex. All, none, some; same, more, less; etc.

5. Temporal Relationships
Ex. Yesterday, today, and tomorrow; early, late; fast, slow; first, last

6. Auditory Relationships
Ex. Loud, louder, loudest; soft, softer, softest; noisy, quiet; high, low; etc.

C. Classification

* 1. Given at least two objects that define the basis of grouping, the child can select an additional object that "goes with them" on the basis of:
   - Size: height, length
   - Form: circular, square, triangular
   - Function: to ride in, to eat, etc.
   - Class: animals, vehicles, etc.

2. Given 4 objects, 3 of which have an attribute in common, the child can sort out the inappropriate object on the basis of:
   - Size: height, length
   - Form: circular, square, triangular
   - Function: to ride in, to eat, etc.
   - Class: vehicles, animals

3. The child can verbalize the basis for grouping and sorting.

D. Ordering

1. Given the largest and smallest of five objects which are graduated in size the child can insert the three intermediate objects in their proper order.
2. Given pictures of the earliest and latest of five events in a logically ordered temporal sequence the child can insert pictures of the intermediate events in their proper order.

E. Reasoning and Problem Solving

1. Inferences and causality

* a. Given a situation the child can infer probable antecedent events.
Ex. Given an apple with a bite missing the child can indicate that someone was eating it.

* b. Given a situation the child can infer probable consequent events.
Ex. Given a man stepping off a ladder, and a bucket of paint beneath his foot, the child recognizes that the man is going to step into the paint.

c. Ordering on the basis of causality
Ex. Given two or more events which are causally related the child can place them in their appropriate causal order.

2. Generating and Evaluating Explanations and Solutions

* a. The child can suggest multiple solutions to simple problems.

* b. Given a set of suggested solutions to a simple problem the child can select the most relevant, complete, or efficient.

3. Attitudes toward Inquiry and Problem Solving

a. Persistence
The child persists in his efforts to solve problems and understand events despite early failures.

b. Reactions to lack of knowledge
The child exhibits no undue frustration or embarassment when he must admit to a reasonable lack of knowledge or when he must ask questions.

c. Impulse control
The child understands that reflection and planning may pay off where premature problem attack will not.

III. The Physical Environment

The child's conception of the physical world should include general information about natural phenomena, both near and distant; about certain processes which occur in nature; about certain interdependencies which relate various natural phenomena; and about the ways in which man explores and exploits the natural world.

A. The Child and the Physical World Around Him

1. The Natural Environment

a. Land, Sky, and Water
The child should realize that the earth is made of land and water, and that the earth's surface differs in various places.
Ex. The child can identify puddles, rivers, lakes, and oceans when shown pictures of them, can tell that all of them are water, and can tell how they are similar and different in terms of size and depth.

The child can identify mountains and rocks although they differ in size and shape.
The child can identify and give salient facts about objects seen in the sky.
Ex. The sun provides heat and light during the day; the moon and stars provide light at at night; airplanes carry people; rockets explore space.

b. City and Country
The child can distinguish the environment and natural life of the city from those of the country.

c. Plants and Animals
The child can classify a group of objects as plants although they differ in size, shape, and appearance.
The child can tell that plants are living things, and that they require sun and water to grow and live.
The child can name some plants that are grown and eaten by man.
The child can classify a group of objects as animals although they vary in size, shape, and appearance.
The child can tell that animals are living things, and that they need food and water to grow and live.
The child can associate certain animals with their homes.
Ex. The child can associate birds with nests; fish with water; bears with forests.

d. Natural Processes and Cycles
  (1) Reproduction, Growth, and Development
  Given pictures of various kinds of young, the child can tell what they will be when they grow up.
  Ex. Calves and colts become cows or horses; tadpoles, frogs; caterpillars, butterflies; boys, men; girls, women.
  The child can identify such seeds as corn, acorn, bean, and knows that after one of these has been planted a new plant will grow.
  The child can identify birth, growth, aging, and death as stages in the life process of individual plants and animals.
  (2) Weather and Seasons
  The child can describe the weather and activities which are associated with summer and winter.
  Ex. In summer the weather is hot and sunny, the trees all have their leaves, people wear light-weight clothing and may go swimming; in winter the weather is cold and snowy; many trees have lost their leaves; people wear heavy-weight clothing, and may

2. The Man-Made Environment

a. Machines

The child can identify automobiles, trucks, buses, airplanes, and boats, and can tell where and how each is used.

The child can identify such common tools as a hammer and saw, and can tell how each is used.

The child can identify basic appliances such as refrigerator, record player, and stove, and can tell how each is used.

b. Buildings and Other Structures

The child can identify some of the different types of buildings which serve as family homes, schools, and stores.

The child can identify some of the materials used in building, such as bricks, wood, and concrete.

The child can identify as man-made such structures as bridges, dams, streets, and roads.

IV. The Social Environment

The child can identify himself and other familiar individuals in terms of role-defining characteristics. He is familiar with forms and functions of institutions which he may encounter. He comes to see situations from more than one point of view, begins to see the necessity for certain social rules, particularly those insuring justice and fair play.

A. Social Units

1. Self

a. The child knows his own name.

b. The child can specify whether he or she will grow up to be a mother or a father.

2. Roles

Given the name of certain roles from the family, neighborhood, city or town, the child can enumerate appropriate responsibilities.

Ex. The child can name one or more principal functions of the father and mother, mayor, policeman, baker, mailman, farmer, fireman, soldier, doctor, dentist, baker, schoolboy, or schoolgirl.

3. Social Groups and Institutions of Concern to Children

a. The Family and the Home

The child views such activities as reading, playing of games, and excursions as normal family activities.

The child recognizes that various types of structures all serve as homes.

b. The Neighborhood

The child distinguishes between neighborhood areas that are safe and unsafe for play.

c. The City or Town

The child recognizes various structures, spaces, and points of interest which make up the city or town.

Ex. The child is familiar with the concepts of a zoo, park or playground, airport, and parade, and with stores where various types of common items may be purchased.
The child understands that there are many different cities, that they have finite boundaries, that various goods or products must be transported in and out, and that various modes of transportation are employed.
The child identifies the respective functions of such institutions as the school, post office, and hospital.
Ex. The child knows that people go to school to learn how to read and write; to the hospital if ill or having a baby.

B. Social Interactions

*1. Differences in Perspectives
The child recognizes that a single event may be seen and interpreted differently by different individuals.
Ex. Given a picture showing one boy in a bathing suit and another boy in a snow suit, the child can express the feelings of both boys in the event of snow.

*2. Cooperation
The child recognizes that in certain situations it is beneficial for two or more individuals to work together toward a common goal.
Ex. Two girls want to bring chairs to the table, but can only lift and carry them by working together.

*3. Rules Which Insure Justice and Fair Play

a. Behaving by Rules
The child is able to behave according to the constraints of simple rules presented either verbally or by models.

b. Recognizing Fairness or Unfairness
The child can distinguish simple situations representing fairness from those representing unfairness.
Ex. The child can say whether a particular form of praise or punishment is or is not appropriate in a particular situation.

c. Evaluating Rules
Given a rule, the child can tell whether it is good or bad, and why.

d. Generating Rules
Given a situation involving interpersonal conflict, the child can furnish an appropriate rule for resolving it.
Ex. Told that two boys both wish to play with the same toy, the child must formulate a rule that is equitable (neither may have it; they can take turns; etc.).

Appendix B

DESCRIPTION OF TESTS AND SUBTESTS AND SAMPLE ITEMS*

Body Parts Test

1. Pointing -- 10 items - Child pointed to parts of his own body when named by tester. Five items were eliminated from the posttest since over 95% answered them correctly on the pretest.

2. Naming -- 20 items - Child named the parts of the body pointed to by the tester. Five items were eliminated from the posttest.

3. Function (point) -- 8 items - Child pointed to pictures of body parts that performed certain functions.

   See Sample item 1.

4. Function (verbal) -- 4 items - Child supplied name of body part used to perform a certain function.

   Example: You walk with your feet.
   You smell with your nose.
   What do you see with?

Letters Test

1. Matching -- 11 items and 1 example item - Child pointed to one of four pictures, letters, numbers, geometric forms, or words that matched the stimulus.

2. Recognizing Letters -- 8 items - Child selected a named letter from four letters presented.

3. Naming Capital Letters -- 16 items - Child gave name of each capital letter pointed to by tester.

4. Naming Lower Case Letters -- 8 items - Child gave name of each lower case letter pointed to by tester.

5. Matching Letters In Words -- 4 items - Child pointed to one of three containing the stimulus letter.

6. Recognizing Letters In Words -- 4 items - Child pointed to one of three words containing a letter named verbally by the tester.

9. Initial Sounds -- 4 items on the pretest and 6 items on the posttest - Child selected the word (presented verbally and pictorially) that started with a letter named by the tester.

   Example: This is sock, table, car, ring.
   Which one begins with T?

---

*Percentages of all 943 children answering each sample item are listed according to the children's viewing quartiles. For an explanation of quartiles, see Chapter III, Section A of the report.

10. Reading Words -- 6 items - Child read each word as presented one at a time.

11. Reciting Alphabet -- 1 item

Forms Test

1. Recognizing Forms -- 4 items - Child pointed to one of four forms named by tester.

2. Naming Forms -- 4 items - Child gave name of each form pointed to by tester.

Numbers Test

1. Recognizing Numbers -- 6 items - Child pointed to one of four numbers named by tester.

2. Naming Numbers -- 15 items - Child gave name of each number pointed to by tester.

3. Numerosity -- 6 items - Child pointed to group of objects that contained a specified number or he separated specified number of checkers from a stack of 10 checkers.

   See sample item 2.

4. Counting -- 9 items - Child counted various numbers of pictures, checkers, or parts of his body.

5. Adding and Subtracting -- 7 items - Child solved simple arithmetic problems.

   See sample item 3.

6. Counting from 1 to 20 -- 1 item

Sorting Skills Test -- 6 items - Child selected one of four pictures that did not "go" with the others because of a difference in size, shape, number, or function.

See sample item 4.

Relational Terms Test -- 17 items - Child pointed to picture that showed a relationship of size, position, amount, or distance; child manipulated checkers to demonstrate knowledge of amount relationships.

See sample item 5.

Classification Skills Test -- 24 items - Child was presented pictures of three objects that had one property in common. (size. form, number, or function. He selected one of four other pictures that "belonged" or was the "same" as the three originally presented.

See sample item 6.

Child gave reason why the picture "belonged" with the others. Child supplied an example of a certain characteristic:

Example: People wear shoes.
People wear shirts.
What else do people wear?

Puzzles Test -- 10 items but only five in common between pre and posttest - Child pointed to one of four pictures that had something wrong or missing in it. Child told tester what was wrong or missing in a picture.

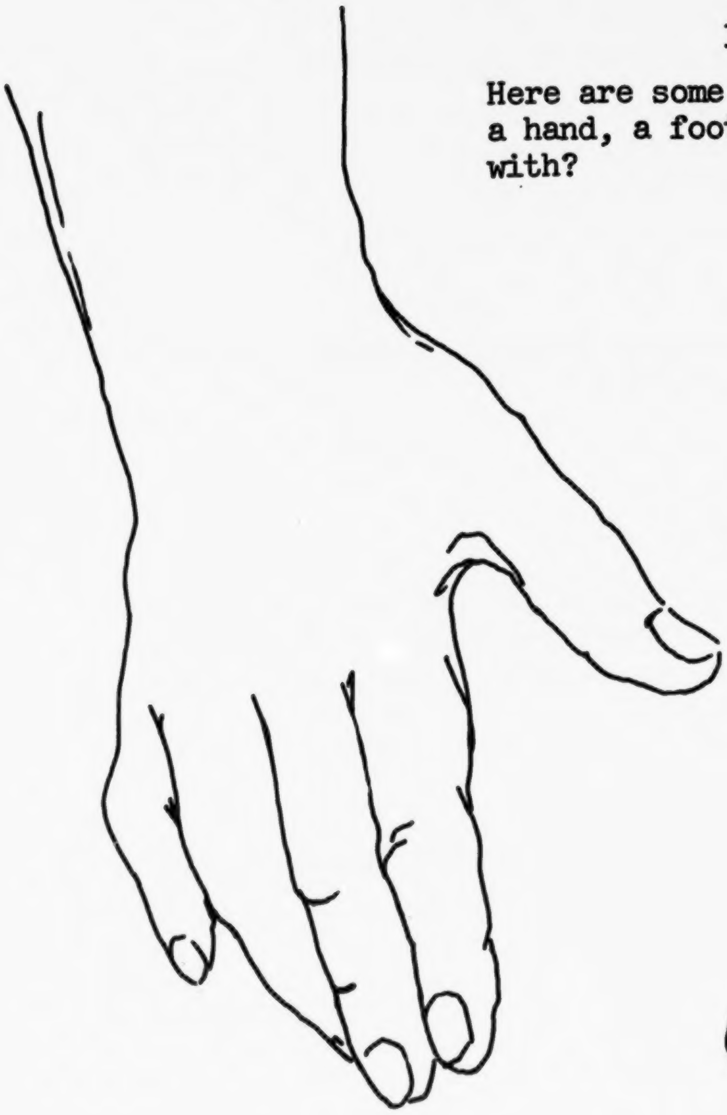
Hidden Triangles Test -- 10 items - Child pointed to one of four pictures that had an equilateral triangle embedded in it.

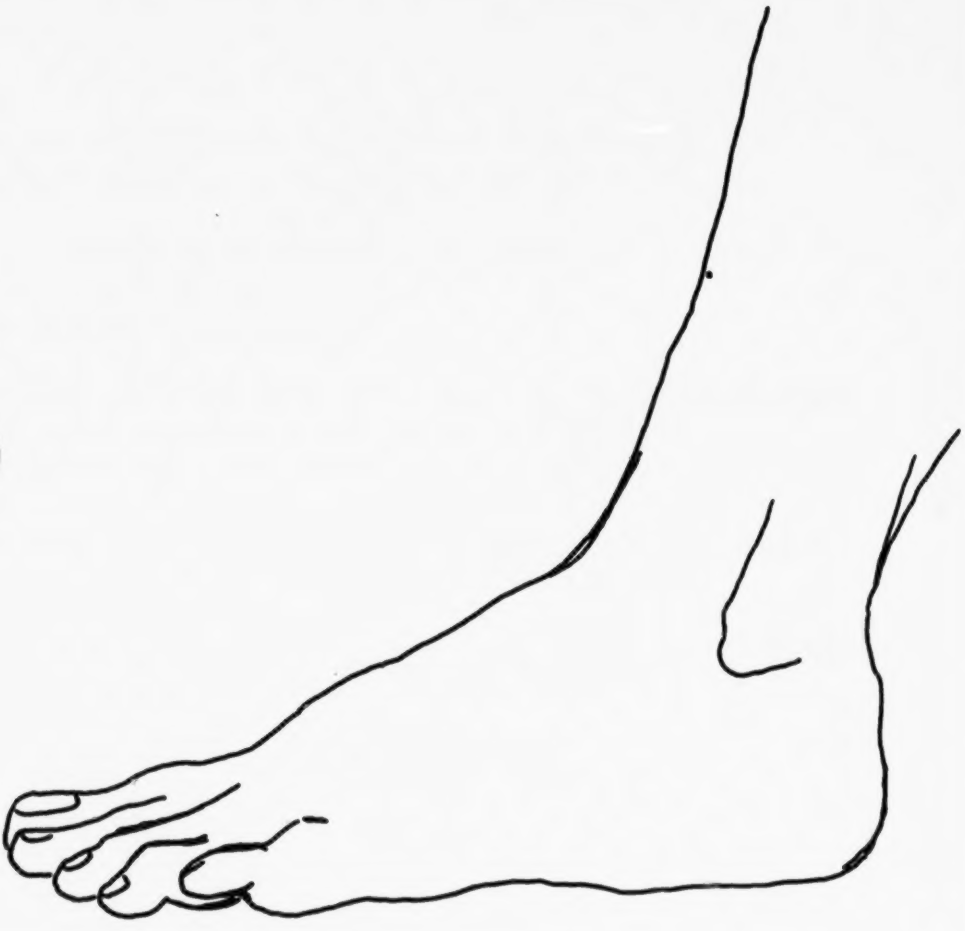
Which Comes First Test -- 12 items - Child pointed to one of four pictures that was first or last in the sequence of events represented.

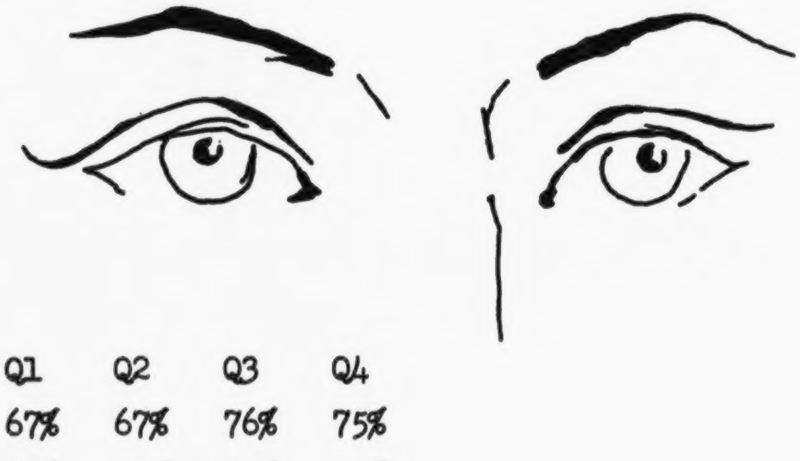
See sample item 7.

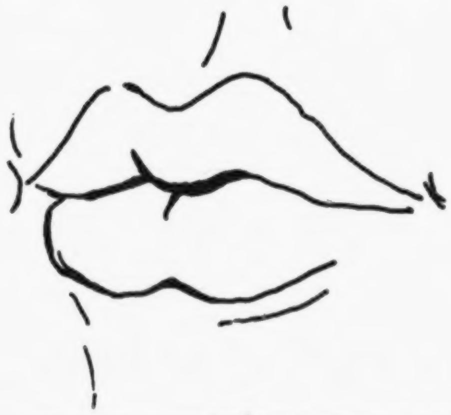
Item 1

Here are some pictures of parts of your body. This is a hand, a foot, a mouth, and eyes. What do you look with?





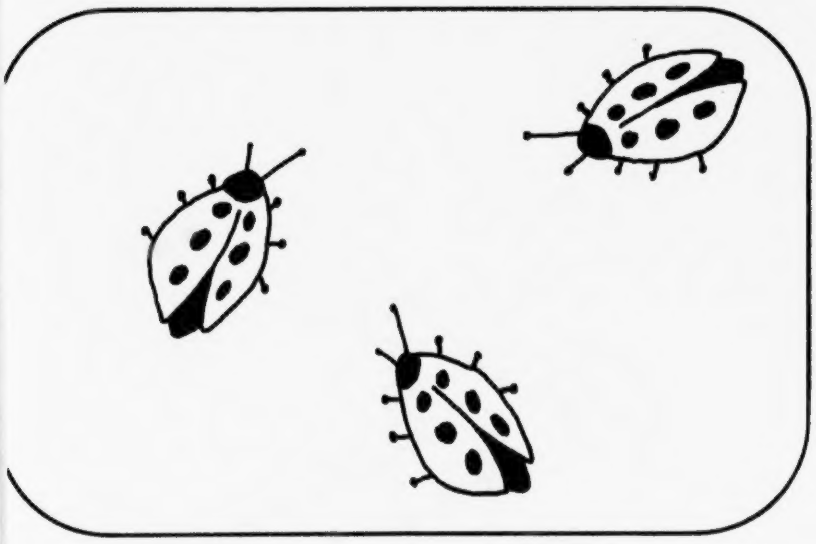


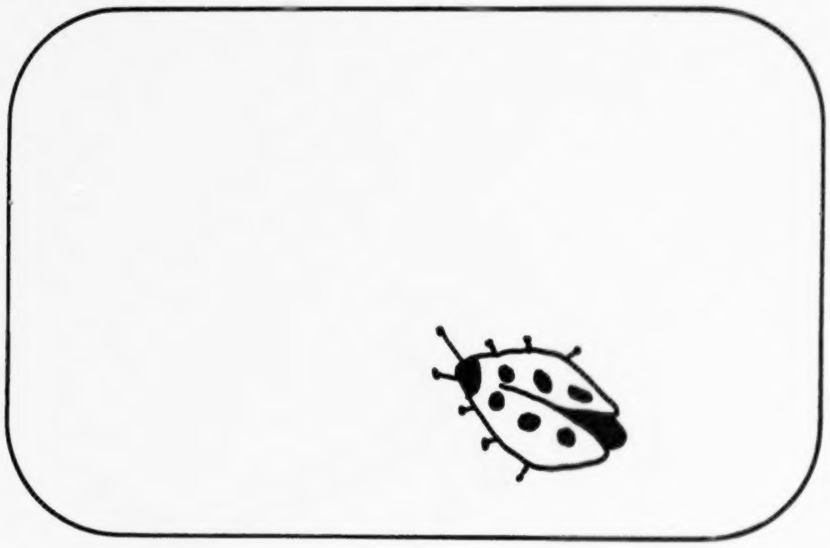


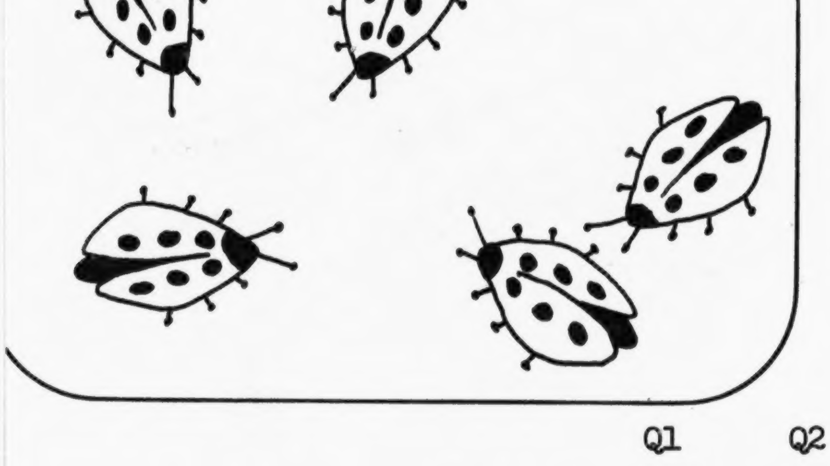
	Q1	Q2	Q3	Q4
Pretest	67%	67%	76%	75%
Posttest	80%	89%	92%	96%

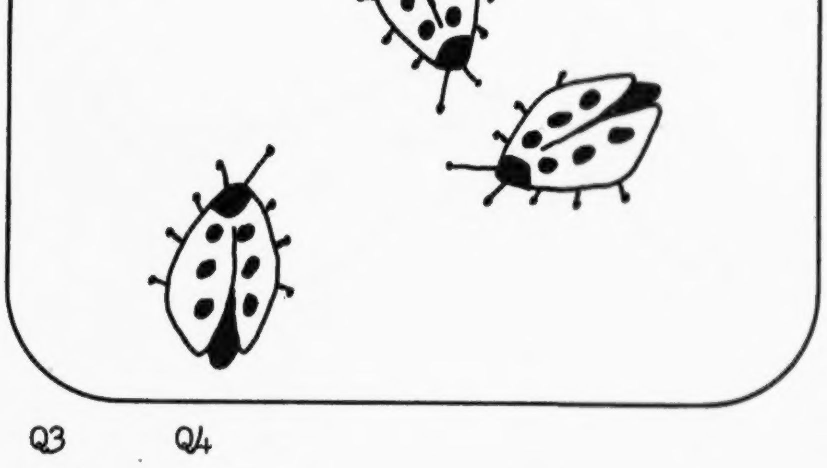
Item 2

Look at the ladybugs here, here, here, and here. Which box has five ladybugs?





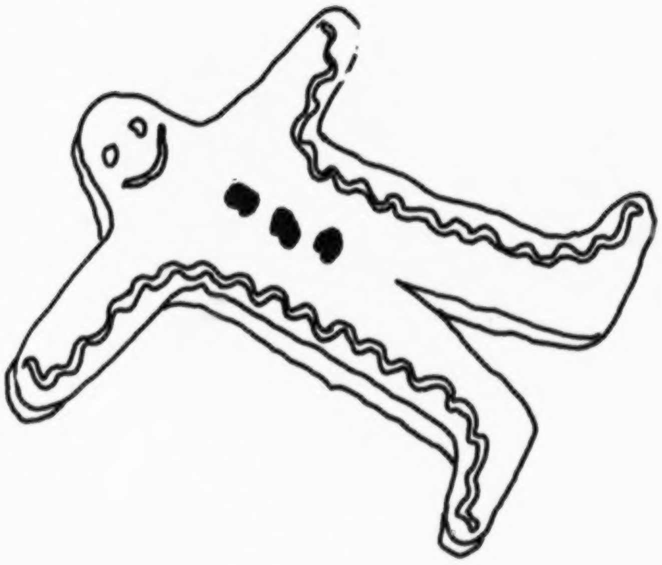


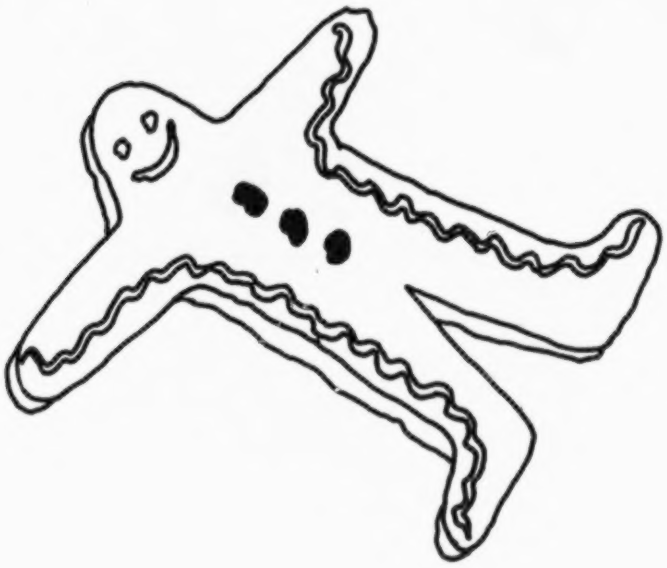


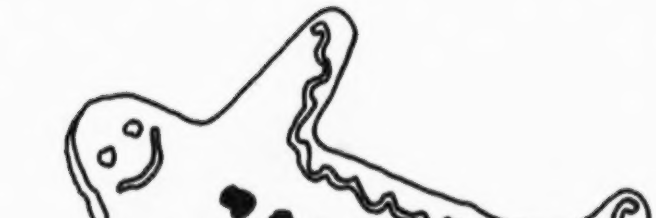
	Q1	Q2	Q3	Q4
Pretest	47%	55%	62%	71%
Posttest	60%	74%	80%	87%

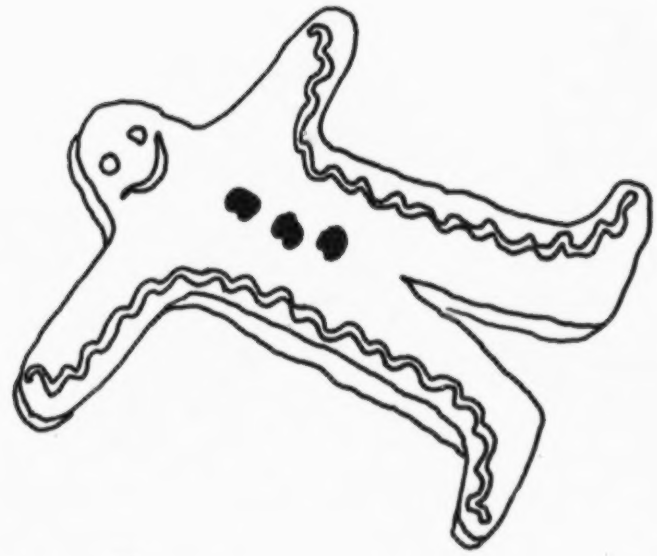
Item 3

Here are four cookies. They are gingerbread men. A little boy eats one cookie. How many are left?





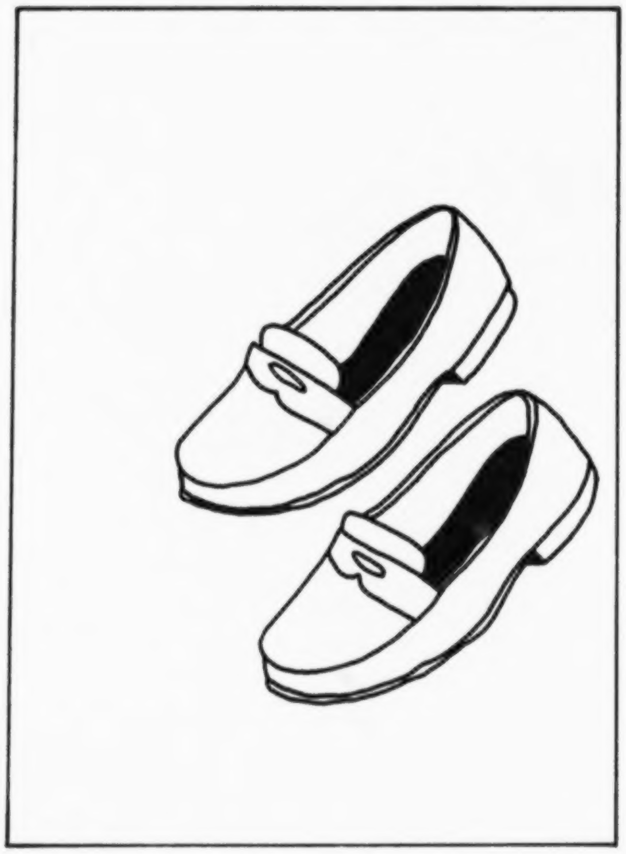


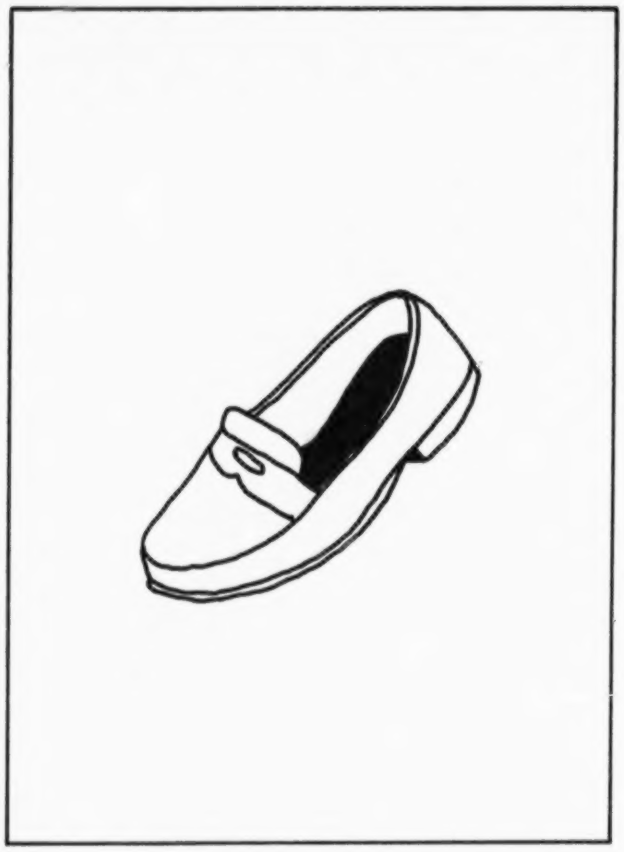


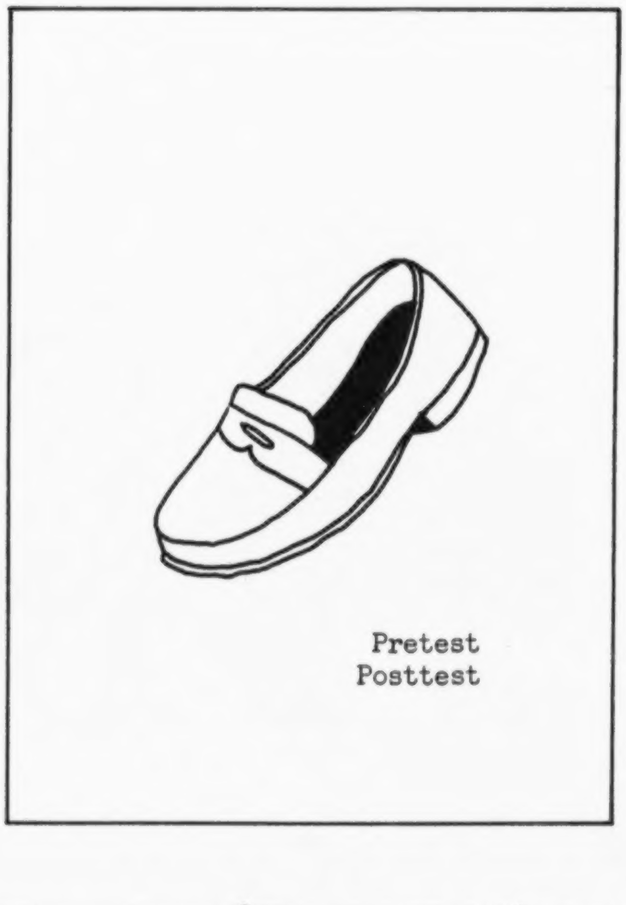
	Q1	Q2	Q3	Q4
Pretest	37%	43%	51%	57%

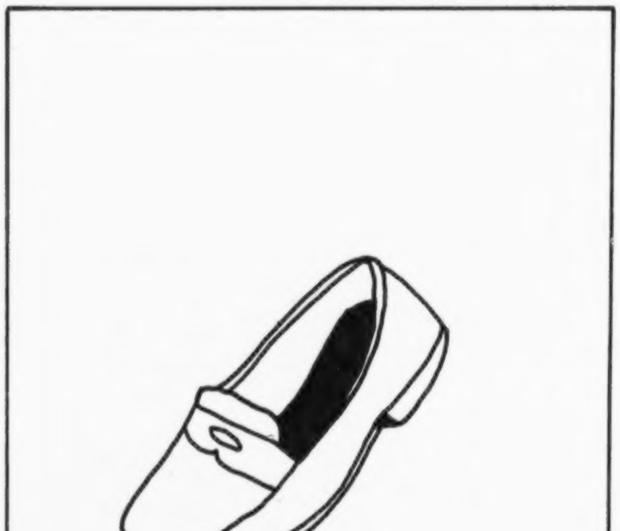
Item 4

Here are pictures of shoes. Which picture doesn't belong with the others? Which is different from the others?





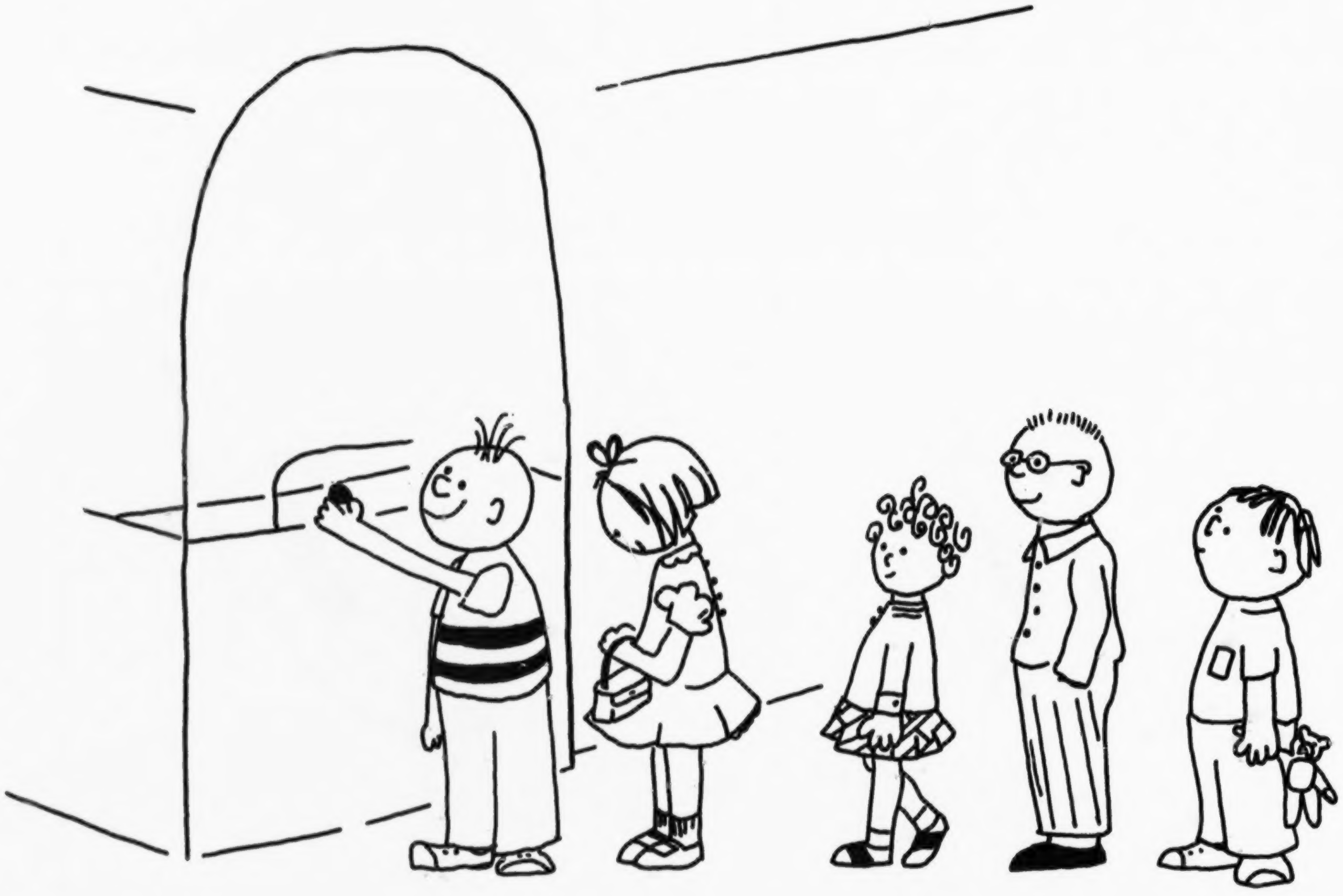




	Q1	Q2	Q3	Q4
Pretest	35%	37%	39%	43%
Posttest	43%	60%	70%	74%

Item 5

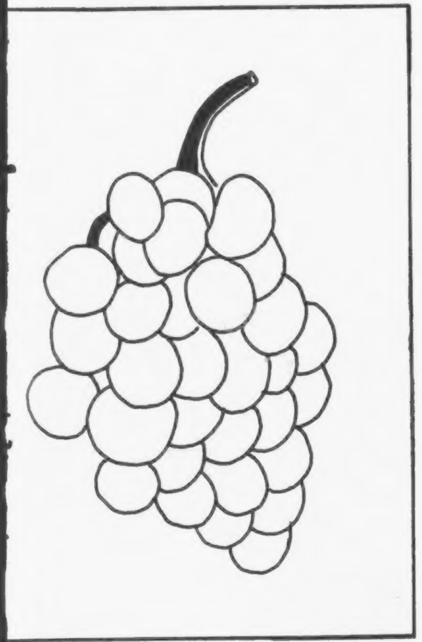
Here are children in line. They are waiting to go to a movie. Which one is last in line?

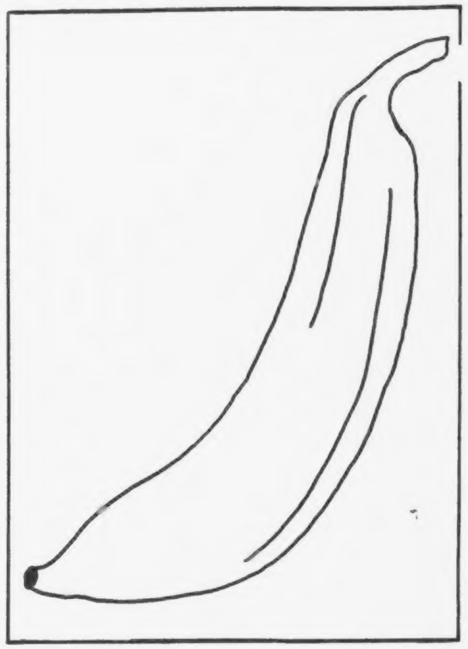


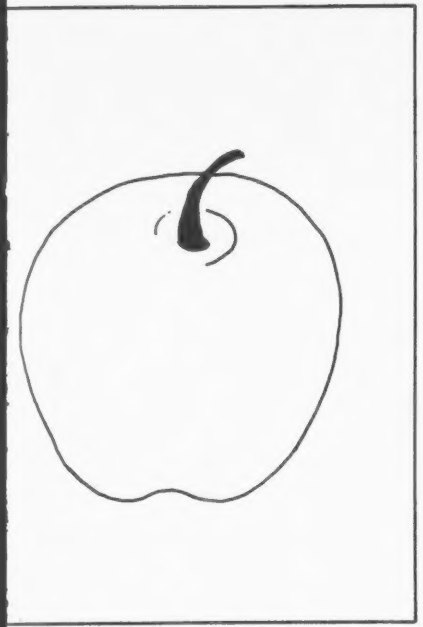
	Q1	Q2	Q3	Q4
Posttest only	23%	39%	42%	51%

ITEM 6

This is a picture of grapes, a banana, and an apple. One picture is missing. Let's find the one that goes here.

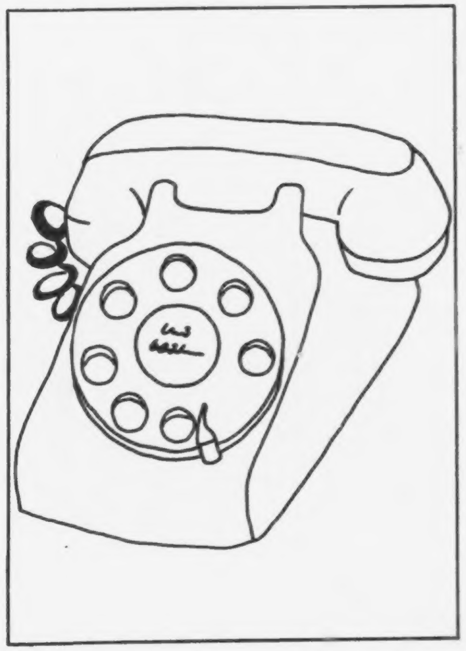


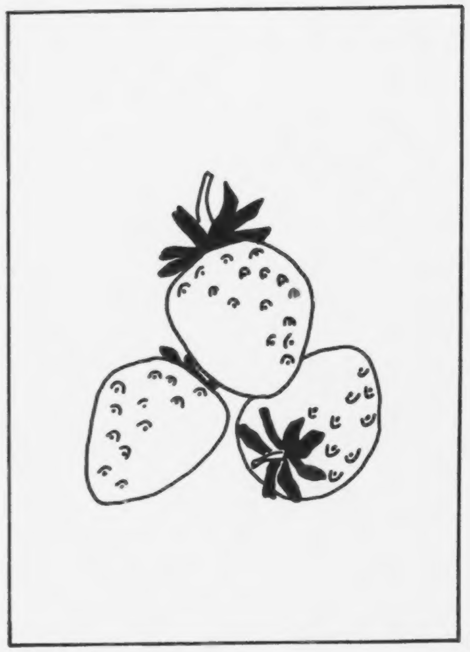


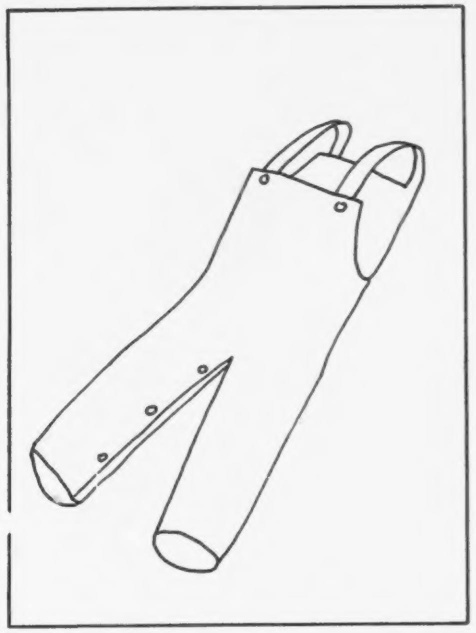


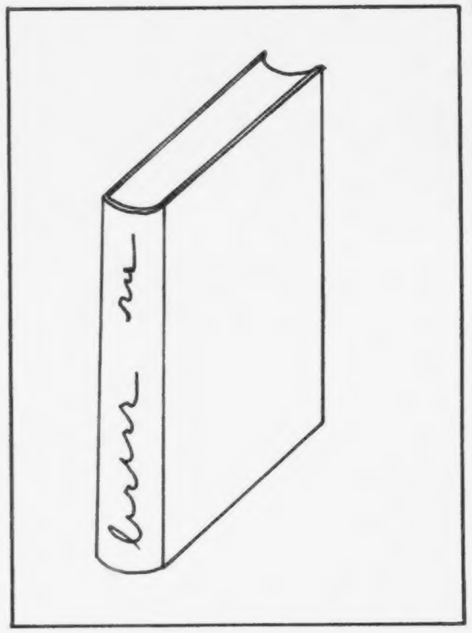
	Q1	Q2	Q3	Q4
Pretest	62%	61%	64%	66%
Posttest	60	79	86	91

Here's a telephone, strawberries, pants, and a book. Which one belongs (goes) with the grapes, banana, and apple?



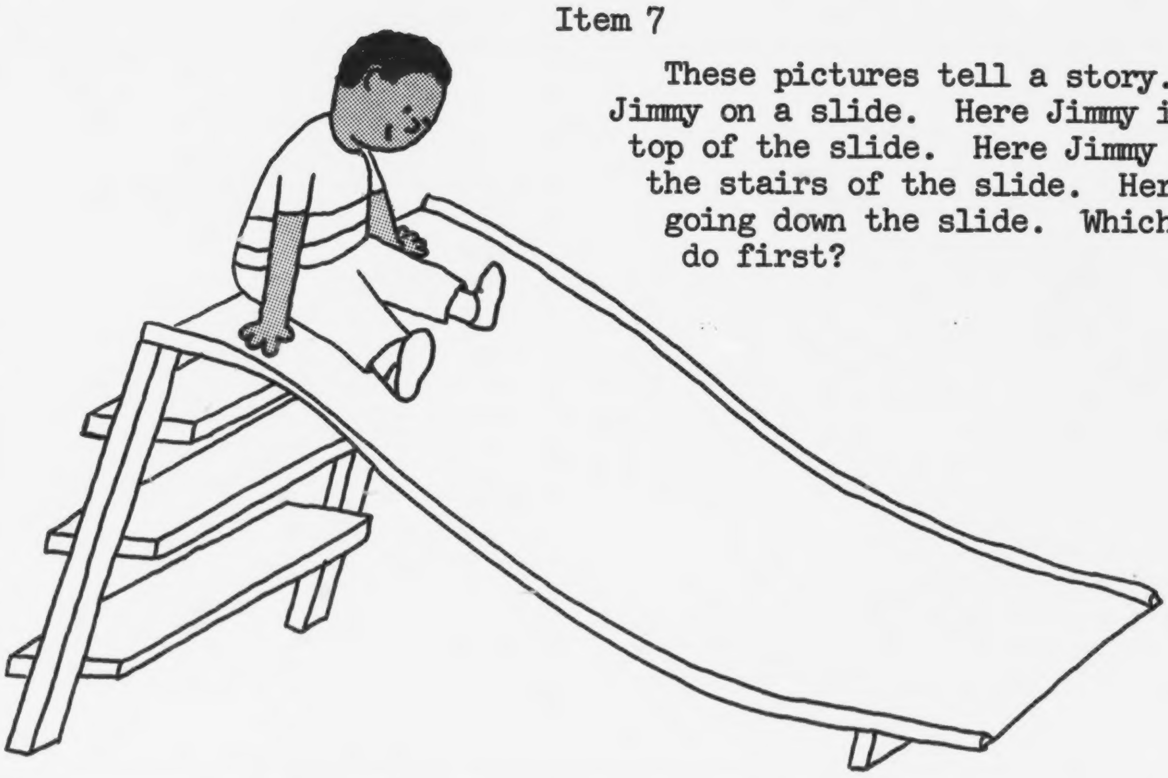


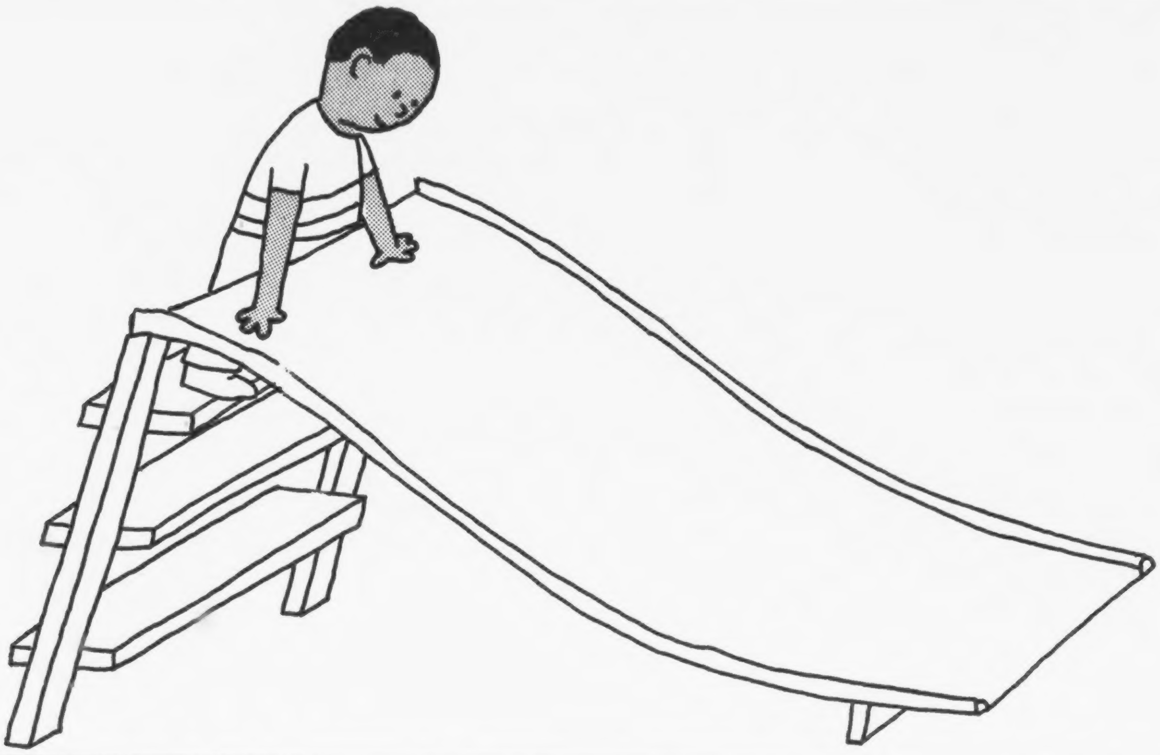




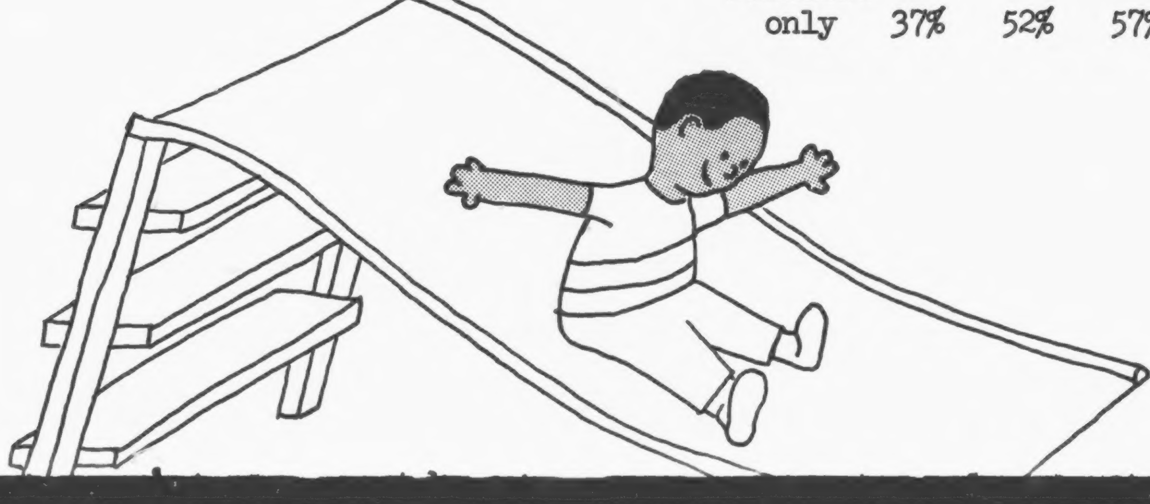
Item 7

These pictures tell a story. They show Jimmy on a slide. Here Jimmy is sitting on top of the slide. Here Jimmy is going up the stairs of the slide. Here Jimmy is going down the slide. Which does Jimmy do first?





	Q1	Q2	Q3	Q4
Posttest only	37%	52%	57%	70%



Appendix C

THE PRETEST PARENT QUESTIONNAIRE

gures in the spaces reserved for
resp es indicate the percentage of the
tota oup choosing that response. When
the ntages for an option do not sum
to 1 is because some respondents
chos to answer that question.

Do Not Code

1 2 3 4 5 6 7
☐☐☐☐☐☐☐
Child's I.D. No.

8 9 10 11 12
☐☐☐☐☐
Tester's I.D. No.

13 14 15
☐☐☐
City No.

ARENT QUESTIONNAIRE

1. ull name ______________________________
First Middle Last

2. Your address ______________________________

3. Your phone number ______________________________

Part I

4. Child's full name ______________________________
First Middle Last

5. Your relationship to child (check one)

95% 1. Mother
2 2. Other female
3 3. Father
0 4. Other male

6. Child's date of birth ______________________________
Month Day Year

7. Child's sex

51% 1. Male
49 2. Female

8. How does your child spend most of his time at home? (check as many as apply)

75% 1. Watches TV
44 2. Plays with me
38 3. Follows me around
48 4. Plays by himself
67 5. Plays with children in neighborhood
79 6. Plays with brothers, sisters, or relatives
10 7. Other: (specify) ______________________________

____

9. About how much time is your child at home each day? (This does not include time he sleeps.)

39% 1. Almost all the time (11 or more hours a day)
32 2. Most of the time (8-10 hours)

22 3. About half the time (5-7 hours)   1 Other
7 4. Small part of the time (2-4 hours)
0 5. Almost none of the time (1 hour or less)

10. What do you usually do when you are with your child? (check as many as apply)

64 % 1. Play with him
58 2. Read to him
81 3. Do the housework (including cooking and shopping)
15 4. Watch TV by myself
68 5. Watch TV with him
17 6. Read by myself
9 7. Other (specify)______________________________

11. At what age do you think your child will be able to do these things?

	1	2	3	4
	Was able to do at age 3	Will be able to do at age		
		4 or 5	6 or 7	8 or more
a. Undress himself	74 %	97 %	98 %	98%
b. Dress himself	47	91	95	95
c. Pick up and care for his own toys	55	90	95	96
d. Tie his own shoes	4	58	91	93
e. Make his own bed	7	38	74	92
f. Say the alphabet	14	61	89	91
g. Say his full name	66	93	95	95
h. Know these parts of his body: ears, toes, neck, knees	73	94	96	96
i. Count to ten	42	86	95	95
j. Read stories without your help	2	11	73	91

12. How often is your child read to?

5 % 1. Never
8 2. Less than once a week
19 3. About once a week
35 4. Several times a week
23 5. At least once a day
7 6. Don't know

13. How often does he use such things as paper, crayons, or paints at home?

2% 1. Never
3 2. Less than once a week
9 3. About once a week
43 4. Several times a week
40 5. At least once a day
2 6. Don't know

14. About how many hours did he watch TV yesterday?

6% 1. Six or more hours
16 2. Four or five hours
35% 3. Two or three hours
40 4. Less than two hours

15. About how many hours a day does he usually watch television?

6% 1. Six or more hours
18 2. Four or five hours
41% 3. Two or three hours
31 4. Less than two hours

16. What are the names of his favorite programs? (The ones he watches almost every time they're shown.)

Specify ______________________________

____

_____ None
_____ Don't know

17. Does your child usually seem interested in the TV program he is watching?

94% 1. Yes
3 2. No
2 3. Don't know

18. Does he ever watch the local educational channel?

City	Channel
Phila.	12
Boston	2
Durham	5
Phoenix	8
N. Y.	13

40% 1. Yes → 19. Which program(s) does he watch on this channel? Specify ______________________________

Don't know 10

50 2. No

20. Does your child attend school?

47% 1. No.
3 2. Yes, kindergarten
13 3. Yes, nursery school
23% 4. Yes, Head Start
11 5. Yes, day care center
2 6. Other (specify) ______________________________

21. Why did you decide to send him to school?

____

____

____

22. In school, do you think he will have more or fewer problems than most children getting used to school?

35% 1. Fewer problems
51 2. About average number of problems
3 3. More problems
6 4. Don't know

23. Compared to other children that will be in his class, how do you think he will get along with the teacher?

17% 1. Better than most children
69 2. About average
2 3. Not as well as most children
7 4. Don't know

24. If you could have your wish, what grade in school would you like him to complete?

0% 1. 8th grade or less
1 2. Some high school
14 3. All of high school
16 4. Some college
64 5. College or beyond
2 6. Other (Specify________________________________)
1 7. Don't know

25. Since things don't always turn out the way we want them to, how far do you think he will actually go in school?

1% 1. 8th grade or less
4 2. Some high school
38 3. High school
21 4. Some college
20 5. College or beyond
2 6. Other (Specify________________________________)
12 7. Don't know

26. In your opinion, what could prevent him from going as far as you would like him to go in school?

32% 1. Lack of money in family
5 2. He will want to earn his own money
3 3. He won't have the ability to go any further
13 4. He will lose interest in school
7 5. Other (Specify________________________________)
27 6. I think he will go as far as I'd like him to in school
19 7. Don't know.

27. When will your child enter school?

_______ _______
Month Year

53 '70 8 '72
32 '71 1 '73
7 Other

28. What grade will he enter at that time?

54% 1. Kindergarten
38 2. First grade
5 3. Other (Specify____________________________)

29. Does your child have his own:

	1 Yes	2 No
a. Room	35%	57%
b. Art things like crayons, paints, blackboard	73	22
c. Toys like puzzles, blocks, games	78	18
d. Books	79	15
e. Toy box or other place to keep his own things	74	16
f. TV	16	75

30. How often does your child go to each of these things?

	1 Not Available	2 Every day	3 Once a week	4 Less than once a month	5 Never	Other
a. Summer day camp	14 %	3%	1 %	1%	71%	11%
b. Public library	3	1	9	19	56	12
c. Playground	4	20	28	29	11	8
d. Museum	6	0	0	24	56	14
e. Live theater (for plays or puppet show)	10	0	1	17	60	12
f. Zoo	6	0	3	52	28	10
g. Movie theater	2	0	7	51	33	7

Part II

31. Do you think the schools would be better or worse if parents had more control over them?

20 % 1. Better
18 2. About the same
30 3. Worse
30 4. Don't know

32. Do you think that the teachers understand the problems faced by people in this community?

52 % 1. Yes, they do
15 2. No, they don't
30 3. Don't know

33. Do you think that there is anything that you can do to improve the schools in this neighborhood?

35 % 1. Yes
19 2. No
43 3. Don't know

34. Who do you think is usually to blame when a child does not work hard at school? (Check as many as apply)

69 % 1. Parents
44 2. Teachers
52 3. Child
19 4. Child's friends
10 5. Don't know
7 6. Other (Specify______________________________)

35. Do you feel that most children have to be forced to learn?

4 % 1. Almost all the time
11 2. Most of the time
64 3. Sometimes
18 4. Never

36. Which of the following things do you have?

	1 Yes	2 No
a. Automobile	64%	30 %
b. Black and white TV set	88	8
c. Color TV set	22	66
d. Hi-fi or phonograph	77	19
e. Telephone	74	21
f. Encyclopedia	47	44
g. Dictionary	78	17
h. Still or movie camera	50	42
i. Refrigerator	97	1
j. Oven	90	6
k. Stove	95	2
l. Dishwasher	17	73
m. Clothes washer	76	20
n. Clothes dryer	30	61

37. What was the last grade in school that you completed?

14% 1. 8th grade or less
30 2. Some high school
29 3. All of high school
12 4. Some college
6 5. College graduate or beyond
6 6. Other (Specify________________________)

38. Are you employed full time (35 hours a week or more), part time (less than 35 hours a week), or not at all?

19% 1. Full time
14 2. Part time
11 3. Not employed
52 4. Housewife

39. If you have a job, what kind of work do you do?

____

____

40. What was the last grade in school the male head of the household completed?

13% 1. 8th grade or less
21 2. Some high school
20 3. All of high school
10 4. Some college
13 5. College graduate or beyond
6 6. Other (Specify________________________)

41. Is he in school now?

7% 1. Yes
75 2. No

42. Is he employed full time or part time?

66% 1. Full time (35 hours or more a week)
3 2. Part time (10-35 hours a week)
1 3. Part time (less than 10 hours a week)

43. What is his job? What kind of work does he do?

____

____

44. What is the total number of people living in your home at the present time?

Total #________

45. How many times have you moved in the last three years?

50 % 1. None
32 2. Once
15 3. Two-three times

46. How many years have you lived in this neighborhood?

20% 1. One or less
29 2. Two-three
21 3. Four-six
27 4. More than six

47. How many rooms are there in this apartment or house? (Don't count bathrooms or other rooms too small for general living purposes.)

2% 1. One or two
29 2. Three or four
48 3. Five or six
16 4. Seven or eight
4 5. More than eight

48. Do you read any magazines regularly?

65% 1. Yes
49. Which ones? ____________________
____
____
____

31 2. No

50. About how many books do you read each year?

18% 1. None or one
24 2. Two to four
19 3. Five to ten
15 4. Ten to twenty
19 5. More than twenty

51. What type of dwelling do you live in?

49% 1. Single house, one family
12 2. Duplex or row house, one unit for each family
4 3. Converted single house, converted row house, multi-family
2% 4. Apartment, garden type
7 5. Apartment, multi-story
20 6. Apartment, housing project
0 7. Trailer
2 8. Other (Specify____________________)

Figures placed next to the responses indicate the percentage of the total group choosing that response. When the percentages for an option do not sum to 100 it is because some respondents chose not to answer that question. Rounding error is also present.

For Tester Use Only

1	2	3	4	5	6	7

Child's I.D. No.

8	9	10	11	12

Tester's I.D. No.

13	14	15	16	17
			P	1

City No.

PARENT QUESTIONNAIRE

1. Your full name ____________________

first middle last

2. Your address ____________________

____

3. Your phone number ____________________

For ETS Use Only

4. Your child's full name

____

first middle last

5. Your relationship to child.
(Circle one number for your answer.)

Mother	1	95%	18
Other female . .	2	3	18
Father	3	2	18
Other male . . .	4	0	18

6. How often does your child use such things as paper, crayons, or paints at home?
(Circle one number for your answer.)

Never	1	1%	19
Less than once a week . .	2	4	19
About once a week	3	10	19
Several times a week . .	4	47	19
At least once a day . . .	5	37	19
I don't know	6	2	19

For ETS Use Only

7. What do *you* usually do when you are with your child? (Circle 1 for "Yes" or 2 for "No" for *each* one.)

	Yes	No	Yes	NO	
Play with him	1	2	75%	24%	20
Read to him	1	2	70	30	21
Do the housework (including cooking and shopping)	1	2	84	16	22
Watch TV by myself . .	1	2	23	76	23
Watch TV with him . . .	1	2	86	14	24
Read by myself	1	2	32	67	25
Other (Specify) ____________ . .	1	2	13	82	26

8. How often is your child read to? (Circle one number.)

Never	1	3%	27
Less than once a week . .	2	11	27
About once a week	3	21	27
Several times a week . .	4	40	27
At least once a day . . .	5	19	27
I don't know	6	5	27

9. If you could have your wish, what grade in school would you like your child to complete? (Circle one number.)

8th grade or less . .	1	0%	28
Some high school . . .	2	0	28
All of high school . .	3	19	28
Some college	4	20	28
College or beyond . .	5	59	28
Other (Specify ________) . .	6	0	28
I don't know.	7	1	28

For ETS Use Only

10. Do you feel that most children have to be forced to learn?
(Circle one number.)

Almost all the time . .	1	3%	29
Most of the time . . .	2	7	29
Sometimes	3	68	29
Never	4	22	29

11. Do you feel your child has to be forced to learn?
(Circle one number.)

Almost all of the time . .	1	2%	30
Most of the time	2	6	30
Sometimes	3	54	30
Never	4	38	30

12. Has your child ever attended a school of any kind?
(Circle one number.)

Yes . .	1	59%	31
No . .	2	41	31

If you circled 1 (yes) to question 12, please answer all questions. If you circled 2 (no), please go next to question 16.

For ETS Use Only

13. Has your child ever attended any of the school(s) listed below? (Circle 1 for "Yes" or 2 for "No" after *each* one.)

	Yes	No	Yes	No	For ETS Use Only
A kindergarten	1	2	4%	54%	32
A nursery school	1	2	18	42	33
A Head Start Program . .	1	2	35	25	34
A day care center . . .	1	2	21	37	35
Other (Specify ____________) . .	1	2	4	52	36

14. When did your child first start going to school?

__________ Month __________ Year

37
38
39
40

15. Does your child now go to school? (Circle one number.)

			For ETS Use Only
No, my child is not in school now	1	10%	41
Yes, a kindergarten	2	2	41
Yes, a nursery school	3	12	41
Yes, a Head Start Program . .	4	26	41
Yes, a day care center . . .	5	9	41
Yes, other (Specify ________________) . .	6	1	41

16. Which of the things below does your child have? (Check as many as apply.)

		Checked	Not checked	
His (her) own room . .	36%	1	2	42
Art things, like crayons, paints, blackboard	85	1	2	43
Toys, like puzzles, blocks, games	91	1	2	44
Radio	36	1	2	45
TV	—	1	2	46
Books	89	1	2	47

For ETS Use Only

17. How often does your child go to each of the things listed below? (Circle correct number for each place.)

Circle 1 if your child goes every day.

Circle 2 if your child goes about once a week.

Circle 3 if your child goes about once a month.

Circle 4 if your child never goes.

Circle 5 if the thing listed is not available.

	Every Day	Once a Week	Once a Month	Never	Not available	For ETS Use Only
Summer Day Camp	1 3%	2 1%	3 1%	4 76%	5 19%	48
Public Library . .	1 1	2 8	3 25	4 61	5 3	49
Play Ground . . .	1 30	2 29	3 26	4 9	5 5	50
Museum	1 0	2 1	3 22	4 64	5 10	51
Live Theater (for plays or puppet shows) . .	1 0	2 1	3 13	4 62	5 21	52
Zoo	1 0	2 4	3 41	4 28	5 21	53
Movie Theater . .	1 0	2 6	3 44	4 39	5 6	54

For ETS Use Only

18. At what age do you think your child will be able to do the things listed below? (Circle the correct number for each thing.)

Circle 1 if your child was able to do it at age 3 or less.

Circle 2 if your child was able to do it at age 4 or 5 or if you think he will be able to do it at age 4 or 5.

Circle 3 if you think your child will be able to do it at age 6 or 7.

Circle 4 if you think your child will be able to do it at age 8 or more.

	Age 3 or Less	Age 4 or 5	Age 6 or 7	Age 8 or more	
Undress himself . . .	1 66%	2 31%	3 1%	4 0%	55
Dress himself	1 40	2 55	3 4	4 0	56
Pick up and care for his own toys . .	1 44	2 48	3 6	4 1	57
Tie his own shoes . .	1 4	2 54	3 39	4 3	58
Make his own bed . .	1 3	2 37	3 41	4 16	59
Say the alphabet . .	1 15	2 59	3 22	4 2	60
Say his full name . .	1 60	2 36	3 3	4 0	61
Know these parts of his body: ears, toes, neck, knees	1 65	2 32	3 3	4 1	62
Count to ten	1 38	2 55	3 6	4 1	63
Read stories without your help . .	1 1	2 7	3 72	4 19	64

For ETS Use Only

19. About how many hours did your child watch TV yesterday?
(Check one of these answers.)

Six or more hours . . .	8%	1 65
Four or five hours . .	18	2 65
Two or three hours . .	38	3 65
Less than two hours . .	36	4 65

20. About how many hours a day does your child usually watch television?
(Check one of these answers.)

Six or more hours . . .	10%	1 66
Four or five hours . .	26	2 66
Two or three hours . .	44	3 66
Less than two hours . .	19	4 66

New Card

Dup. 16 cols.

21. What are the names of your child's favorite TV shows? Please list them by name. If your child has no favorite shows, check "none". Please feel free to ask your child what his favorite shows are.

My child's favorite TV shows:

____

____

____

5% 1. None

2 17
___ 18
___ 19
___ 20
___ 21
___ 22
___ 23
___ 24
___ 25
___ 26
___ 27
___ 28
___ 29
___ 30
___ 31

For ETS
Use Only

22. Does your child ever watch the local educational television channel? (Circle one number for your answer.)

> In Philadelphia this is channel 12.
>
> In Boston this is channel 2.
>
> In Durham this is channel 4.
>
> In Phoenix this is channel 8.
>
> In California this is channel 6 and 9.
>
> In Dallas this is channel 13.

Yes	1	85%	32
No	2	12	32
I don't know . .	3	2	32

> If you circled 1 (yes) to question 22 please go next to question 23. If you circled 2 (no) or 3 (I don't know) to question 22 please go next to question 24.

23. What are the names of the shows that your child watches on the Educational Television channel? If you do not know, check the last blank.

____

____

____

__________ 1. I don't know.

___ 33
___ 34
___ 35
___ 36
___ 37
___ 38

For ETS Use Only

24. Does your child ever watch the TV show Sesame Street? If you don't know, please feel free to ask your child. (Circle one number.)

Yes . .	1	88%	39
No . .	2	11	39

> If you circled 1 (yes) to question 24 please go next to question 25. If you circled 2 (no) to question 24 please go next to the last question (35).

25. About how many times a week does your child watch Sesame Street? (Check one of these answers.)

More than 5 times a week (more than once a day) . .	28%	1	40
4 or 5 times a week . . .	40	2	40
2 or 3 times a week . . .	14	3	40
0 or 1 time a week	5	4	40
I don't know	2	5	40

26. About how much of each Sesame Street show does he usually watch? (Circle one number.)

Almost all of it . .	1	72%	41
About half of it . .	2	11	41
Very little of it . .	3	2	41
I don't know	4	3	41

For ETS Use Only

27. Where does your child usually watch the Sesame Street show?
(Circle one number.)

At home	1	62%	42
In a class (School, Preschool, Daycare, etc.) . .	2	12	42
At the home of friend or relatives	3	3	42
Other (Specify ________) . .	4	5	42

28. Do you ever watch Sesame Street with your child?
(Circle one number.)

Almost always . .	1	20%	43
Usually	2	14	43
Sometimes	3	44	43
Hardly ever . . .	4	12	43

29. Do you and your child ever talk about Sesame Street either when the show is on or after it is over?
(Circle one number.)

Almost always . .	1	22%	44
Usually	2	22	44
Sometimes	3	37	44
Hardly ever . . .	4	9	44

30. Does your child ever play games based on Sesame Street? (For example, does he pretend he is one of the people on Sesame Street.)
(Circle one number.)

Almost always . .	1	7%	45
Usually	2	8	45
Sometimes	3	41	45
Hardly ever . . .	4	19	45
I don't know . .	5	14	45

For ETS Use Only

31. When your child watches Sesame Street how interested does he seem to be when the following things are on? (Circle the correct number.)

Circle 1 if your child seems not interested

Circle 2 if your child seems somewhat interested

Circle 3 if your child seems very interested

Circle 4 if you don't know or can't tell.

	Not Interested	Somewhat Interested	Very Interested	Don't know	
People	1 4%	2 34%	3 44%	4 6%	46
Puppets	1 2	2 9	3 74	4 4	47
Cartoons	1 1	2 10	3 75	4 5	48
Animals	1 2	2 19	3 66	4 4	49
Films	1 6	2 31	3 42	4 9	50

32. In your opinion how helpful has Sesame Street been for your child? (Circle one number.) 51

Not helpful at all . .	1	1%
Somewhat helpful . . .	2	14
Very helpful	3	69
I don't know	4	5

33. On which kind of television does your child usually watch Sesame Street? (Circle one number.)

Black & White . .	1	69%	52
Color	2	17	52

For ETS
Use Only

34. If you have anything you would like to say about the show Sesame Street, please do so below. Specific examples would be appreciated.

35. If you have anything you would like to say about your part in the Educational Testing Service study, please do so below.

Appendix E

VIEWING RECORDS

SESAME STREET VIEWING RECORD

Name of Child______________________________ Address__________________________

Child's ID Number _______________________ __________________________

City Number__________

Directions

This form is used to record the amount of time your child spends at home watching the television show SESAME STREET. These times do not have to be recorded exactly. One of the following numbers is to be placed in the box under the appropriate day of the month to show how long your child watched SESAME STREET that day.

3	SESAME STREET is shown more than once each day. If your child watches all of one show and all or parts of any other showings place a 3 in the correct box.
2	Place a 2 in the box if your child watches all or almost all of one show.
1	Place a 1 in the box if your child watches only about one-half or 30 minutes of one show.
0	Place a 0 in the box if your child watches little or none of the show.
☐	Leave the box empty if no show was televised that day.

Month ____________________

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17

18	19	20	21	22	23	24	25	26	27	28	29	30	31

Sesame Street School Viewing Record

Directions

The following form is used to record the amount of time nursery school children spend watching the television show Sesame Street.

The amount of time each child spends viewing this program must necessarily be recorded as an approximation and hence only one-half hour intervals are to be considered. The symbols shown below are to be used to record this time for each child.

2	is used when the child watches all or almost all of the show.
1	is used when the child watches only about one-half or 30 minutes of the show.
0	is used when the child is absent or is present yet watches little of the show.

Sesame Street School Viewing Record

School ______________________ Teacher ______________________

City Number ______________ Month ______________

Name of child	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Child's ID No.			

Appendix F
OBSERVATION RECORD

Sesame Street Observation Record

Child's name ______________________________ Observer I.D.# __________

Child's I.D. # ______________________________ Date ____________________

School (if applies) _________________________ City # _______________

Half of Show 1 2 _________________________

Total number of children watching TV (including observed child) _____

I. Description of segment to be observed:

a. Visual behavior (check one)

☐ 1. Child watched very little or none of segment
☐ 2. Child watched some of segment
☐ 3. Child watched most or all of segment

b. Verbal behavior (check one)

☐ 1. Child said very little or nothing relating to segment
☐ 2. Child said some things related to segment
☐ 3. Child said many things related to segment

c. Motor behavior (check one)

☐ 1. Child moved little or not at all in relation to segment
☐ 2. Child moved some in relation to segment
☐ 3. Child moved a great deal in relation to segment

d. Group behavior (if child watched with one or more other children)

	Yes	No	No
1. Was child's visual behavior similar to others?	☐	Watched more ☐	Watched less ☐
2. Was child's verbal behavior similar to others?	☐	Spoke more ☐	Spoke less ☐
3. Was child's motor behavior similar to others?	☐	Moved more ☐	Moved less ☐

e. Other comments about segment

____

____

f. Was the mother (or babysitter) or teacher watching TV with the Child during the segment?

Yes ☐ No ☐ Sometimes ☐

II. Description of segment to be observed:

a. Visual behavior (check one)

☐ 1. Child watched very little or none of segment
☐ 2. Child watched some of segment
☐ 3. Child watched most or all of segment

b. Verbal behavior (check one)

☐ 1. Child said very little or nothing relating to segment
☐ 2. Child said some things related to segment
☐ 3. Child said many things related to segment

c. Motor behavior (check one)

☐ 1. Child moved little or not at all in relation to segment
☐ 2. Child moved some in relation to segment
☐ 3. Child moved a great deal in relation to segment

d. Group behavior (if child watched with one or more other children)

	Yes	No	No
1. Was child's visual behavior similar to others?	☐	Watched more ☐	Watched less ☐
2. Was child's verbal behavior similar to others?	☐	Spoke more ☐	Spoke less ☐
3. Was child's motor behavior similar to others?	☐	Moved more ☐	Moved less ☐

e. Other comments about segment

____

____

____

f. Was the mother (or babysitter) or teacher watching TV with the child during the segment?

Yes ☐ No ☐ Sometimes ☐

Child's I.D.# ____________________

III. Description of segment to be observed:

a. Visual behavior (check one)

- ☐ 1. Child watched very little or none of segment
- ☐ 2. Child watched some of segment
- ☐ 3. Child watched most or all of segment

b. Verbal behavior (check one)

- ☐ 1. Child said very little or nothing relating to segment
- ☐ 2. Child said some things related to segment
- ☐ 3. Child said many things related to segment

c. Motor behavior (check one)

- ☐ 1. Child moved little or not at all in relation to segment
- ☐ 2. Child moved some in relation to segment
- ☐ 3. Child moved a great deal in relation to segment

d. Group behavior (if child watched with one or more other children)

	Yes	No	No
1. Was child's visual behavior similar to others?	☐	Watched more ☐	Watched less ☐
2. Was child's verbal behavior similar to others?	☐	Spoke more ☐	Spoke less ☐
3. Was child's motor behavior similar to others?	☐	Moved more ☐	Moved less ☐

e. Other comments about segment

____

____

____

f. Was the mother (or babysitter) or teacher watching TV with the child during the segment?

Yes	No	Sometimes
☐	☐	☐

IV. Description of segment to be observed:

a. Visual behavior (check one)

☐ 1. Child watched very little or none of segment
☐ 2. Child watched some of segment
☐ 3. Child watched most or all of segment

b. Verbal behavior (check one)

☐ 1. Child said very little or nothing relating to segment
☐ 2. Child said some things related to segment
☐ 3. Child said many things related to segment

c. Motor behavior (check one)

☐ 1. Child moved little or not at all in relation to segment
☐ 2. Child moved some in relation to segment
☐ 3. Child moved a great deal in relation to segment

d. Group behavior (if child watched with one or more other children)

	Yes	No	No
1. Was child's visual behavior similar to others?	☐	Watched more ☐	Watched less ☐
2. Was child's verbal behavior similar to others?	☐	Spoke more ☐	Spoke less ☐
3. Was child's motor behavior similar to others?	☐	Moved more ☐	Moved less ☐

e. Other comments about segment

____

____

f. Was the mother (or babysitter) or teacher watching TV with the child during the segment?

Yes ☐ No ☐ Sometimes ☐

g. Overall remarks

Television reception: (Check one)

Good, visual and audio clear
Fair, either visual or audio (or both) unclear at times
Poor, either visual or audio (or both) often unclear

Comments about entire show or parts of show not observed.

____

____

Appendix G

Goals Observed (01-73)

THE CONTENT ANALYSIS

I. Symbolic Representation

1. Letters (both capital and small) (General)
    - 2) Recognition (ability to select letter named from assortment of letters)
    - 3) Labelling (ability to name individual letter presented)
    - 4) Sounds (ability to recognize the sound of a letter in the initial position in a word)
    - 5) Recitation of alphabet

6. Number 1-10 (General)
    - 7) Recognition
    - 8) Labelling
    - 9) Counting ("How many objects are there on the table?")
    - 10) Numerosity ("Give me 2 marbles from that bag of marbles.")
    - 11) Recitation in order

12. Geometric Forms (General)
    - 13) Recognition
    - 14) Labelling

II. Cognitive Organization

15. Perceptual Discrimination & Orientation
    - 16) Visual Discrimination
        - 17) Recognition of embedded figures (other than letters and numbers)
        - 18) Block and figure construction ("What can you make with these things?")
        - 19) Conceptual synthesis (ability to assemble visual clues to conclude "what's going on here")
    - 20) Auditory Discrimination (Distinguishing signal from noise)
        - 21) Rhyming words
        - 22) Selective attention

23. Relational Concepts (in descending order of emphasis)
    - 24) same/different (underlies all others)
    - 25) amount (more/less/same; none/some/all; most; etc.)
    - 26) size (big/little; short/long/tall; fat/thin; etc.)
    - 27) position (over/under; on/in; up/down; between; etc.)
    - 28) distance (near/far/nearest; here/there)
    - 29) temporal (before/after; first/last; fast/slow)

30. Classification
    - 31) Sorting ("Which of these things is not like the others?") according to
        - 32) size
        - 33) form
        - 34) function
        - 35) class
        - 72) number

36) Classifying ("Which of those things belongs with these?") according to
    37) size
    38) form
    39) function
    40) class
    73) number

III. Reasoning and Problem Solving

41. Problem Sensitivity ("What's wrong here?")
42. Inferences and Causality
    43) Inferring antecedent events ("What made this track?")
    44) Inferring consequent events ("What will happen next?")
    45) Ordering on the basis of causality ("Which came first?")
46. Generating and Evaluating Explanations and Solutions ("What do we do now?")

IV. The Child and His World

47. Self
    48) Body parts and functions
    49) Coordinated movement
    50) Recognition and labelling of emotions
    51) Expressing emotions
    52) Self-esteem
53. Social Units
    54) Roles and functions
        55) family members
        56) community members
    57) Social groups and institutions (school, hospital, city)
58. Social Interactions
    59) Differing perspectives
    60) Cooperations
61. The Man-Made Environment
    62) Machines and tools
    63) Buildings and other structures
64. The Natural Environment
    65) land, sky, and water
    66) city and country
    67) plants and animals
    68) natural processes and cycles
    69) entertainment
    70) limbo
    71) different educational goal

Techniques Observed

Each 30-second rotation with respect to the technique being used was a two-digit number. The first digit was used to designate the type of presentation:

0 live (on the set) presentation
1 film
2 song
3 film with song
4 photograph or drawings

The second digit was used to designate the characters involved in the presentation.

1 people
2 muppets
3 animals
4 animation
5 people and muppets
6 people and animals
7 people, muppets, and animals

For example, the film Hey Cow would be designated 13, film of animals; the film of children with the theme song, "Can You Tell Me How to Get to Sesame Street?" would be designated 31.

Date of Show ____________________

Show Number ____________________

In the top half of each square, a number was recorded indicating the objective and in the bottom half the number indicating the technique being used at that time. This was done every 30 seconds.

half minutes 5 minute intervals	00	01	02	03	04	05	06	07	08	09
1st 5 mins.										
2nd 5 mins.										
3rd 5 mins.										
4th 5 mins.										
5th 5 mins.										
6th 5 mins.										
7th 5 mins.										
8th 5 mins.										
9th 5 mins.										
10th 5 mins.										
11th 5 mins.										
12th 5 mins.										

FOR TESTER USE ONLY

Appendix H

THE PARENT-TEACHER GUIDE INTERVIEW

1	2	3	4	5	6	7

I.D. for Child #1

I.D. for Child #2

I.D. for Child #3

8	9	10	11	12

Tester's I.D. No.

13	14	15

City No.

16	17
S	1

THE SESAME STREET PARENT-TEACHER GUIDE INTERVIEW

This interview should be made only with the person who answers the parent questionnaire. It is to be used with "at home" children only.

For ETS Use only

1. Date of Interview:

   ______ Month ______ Day 1970 Year

2. Hold up a copy of the Parent-Teacher Guide to Sesame Street with the inside page facing the person you are interviewing. Ask the following question and circle one number for the answer:

   "HAVE YOU EVER SEEN ONE OF THESE BEFORE?"

		For ETS Use only
Yes	1	18
No	2	18

****

If the person you are interviewing answers "No" stop the interview. If she says "Yes" continue.

****

3. Put the Guide down inside page facing upward. Then ask:

   "HAVE YOU EVER USED IT?" (Circle one answer only.)

		For ETS Use only
Yes	1	19
No	2	19

For ETS use only

If the answer is "No" stop the interview.
If she answers "Yes" continue. After you
ask each of the following questions, wait
and let the person give you her answer.
Do NOT suggest the answer to her.

4. "WHAT HAVE YOU USED IT FOR?"
(circle a 1 or a 2 for each thing listed.)

	Yes	No	
Used to find out what is on the show	1	2	20
Used to find out other things that could be done with the child . .	1	2	21
Used to find the names of books that might be of interest to the child	1	2	22
Used as a wall poster	1	2	23
Other	1	2	24

5. "HOW OFTEN IS IT USED IN YOUR HOME?"
(Circle one answer only.)

Almost every time the show is on	1	25
Once or twice a week	2	25
Once or twice a month	3	25
Less than once a month	4	25

6. "WHERE DID YOU USUALLY GET YOUR COPIES OF IT?"
(Circle one answer only.)

In the mail (they write away for it) . . .	1	26
At a local store	2	26
At a church	3	26
At a school	4	26
Borrow from someone	5	26
From the ETS Observer	6	26
Other	7	26

Appendix I
THE TEACHER QUESTIONNAIRE

Sesame Street Questionnaire for Teachers

This questionnaire is designed to find out teachers' opinions about the television show Sesame Street and its possibilities for future use in classrooms. Since your class is participating in the Educational Testing Service evaluation of Sesame Street, we would value your opinions on the usefulness of Sesame Street based upon your classroom experiences with the show.

Part I.

Your Name ________________________________

Name of School ________________________________

City ________________________________

Number of Children enrolled in your class __________

Most common age of children (circle one) 3 4 5

How often each week does your class meet?
(place a check (✓) in the appropriate blank)

_____ 5 days or more
_____ 3 or 4 days
_____ 1 or 2 days

How many hours a day does your class meet?
(place a check (✓) in the appropriate blank)

_____ 8 hours or more
_____ 5 - 7 hours
_____ less than 5 hours

Part II.

We hope you will respond to the following questions freely. Please use as much space as you need--attach extra sheets of paper if necessary. If you would cite specific examples, shows, or characters in your comments, it would be greatly appreciated.

1. What parts of Sesame Street do you feel best hold the attention of your class?

2. What parts of Sesame Street do you feel do not hold the attention of your class?

3. Have you used the Children's Television Workshop Parent/Teacher Guide to Sesame Street? _____ Yes _____ No
If yes, in what manner? Did you find it useful? Would you add anything to it or subtract anything?

4. Have you in any way attempted to integrate Sesame Street into the rest of your classroom program? _____ Yes _____ No
If so, how?

5. What do you feel are the overall strengths of Sesame Street?

6. What do you feel are weak points in Sesame Street? Are there things you would like to see more of or would add or subtract from the show?

7. Sesame Street attempts to teach many concepts (numbers, social skills, etc.) by various means. Would you please rank the following methods on a 1 to 5 scale (1 = very ineffective, 5 = very effective) as to their ability to maintain the children's attention and seemingly get their point about the concept across.

		Very Ineffective				Very Effective
a.	Puppets	1	2	3	4	5
b.	Cartoon or animation	1	2	3	4	5
c.	Films	1	2	3	4	5
d.	People (live action)	1	2	3	4	5
e.	Animals	1	2	3	4	5

8. How often does you class view Sesame Street on the average?

_____ Almost every day

_____ About 3 or 4 days per week

_____ About 1 or 2 days per week

_____ Less than once a week

9. About how much of the 60 minutes of Sesame Street do most of the children watch?

_____ 45 to 60 minutes

_____ 30 to 45 minutes

_____ 15 to 30 minutes

_____ 0 to 15 minutes

10. If Sesame Street is continued next year, how often per week would you want your class to view it? (Assume Sesame Street would be similar next year to this year).

_________ Almost every day

_________ About 3 or 4 days per week

_________ About 1 or 2 days per week

_________ Less than once a week

11. Please evaluate the following topics concerning Sesame Street on a 1 to 5 scale (1 = very poor or inappropriate for children, 5 = very good or appropriate for children) based upon your experiences with your class. Circle the appropriate number.

		Very Inappropriate				Very Appropriate
a.	Vocabulary level used	1	2	3	4	5
b.	Pace of material presented	1	2	3	4	5
c.	Methods used to present material	1	2	3	4	5
d.	Material or subject matter itself	1	2	3	4	5
e.	Ability of Sesame Street to maintain children's attention	1	2	3	4	5
f.	Usefulness of Sesame Street in your school program	1	2	3	4	5

12. If you have any further thoughts which you would like to express concerning the classroom usefulness of Sesame Street please do so below.

Appendix J PARENT QUESTIONNAIRE DATA FOR AT-SCHOOL ENCOURAGED, AND NOT-ENCOURAGED CHILDREN

Parent Questionnaire Scales for All Disadvantaged, At-School, Encouraged Children

(by quartiles)

	Maximum Possible Score	Total N=119		Q1 N=8		Q2 N=36		Q3 N=45		Q4 N=30		P
		Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	
Parents'Expectation												
Pre	50	38.5	7.0	31.3	11.9	37.8	7.7	38.4	6.0	38.5	7.0	.002
Post	50	38.9	5.2	36.9	5.7	37.8	5.8	38.9	5.3	40.8	3.7	.081
Child Affluence												
Pre	6	3.6	1.6	3.3	2.3	3.8	1.5	3.5	1.5	3.7	1.7	.769
Post	6	3.9	1.3	4.6	1.3	4.1	1.2	3.6	1.2	3.9	1.4	.087
Child Educational Uses												
Pre	21	4.3		4.3		4.0		4.1		4.9		
Post	21	4.9		4.9		5.1		4.7		5.0		
Parents' Affluence	14	8.7	2.0	7.3	1.5	8.3	2.4	8.9	1.9	9.3	1.6	.033
Mean Years of Parents' Education	16	11.4	2.4	9.6	4.7	11.3	2.6	11.6	2.0	11.6	1.7	.164

Selected Parent Questionnaire Items for Disadvantaged, At-School, Encouraged Children

(by quartiles)

		P		Pretest Questionnaire*				Posttest Questionnaire*			
		Pre	Post	Q1 N=9	Q2 N=45	Q3 N=47	Q4 N=31	Q1 N=10	Q2 N=43	Q3 N=52	Q4 N=34
How often child uses art things at home.	**Once a day**	ns	ns	11%	44%	30%	45%	0%	40%	25%	44%
	Several a week			67	42	64	42	60	49	63	53
	Once a week or less			11	9	6	13	40	12	12	3
	Never			0	2	0	0	0	0	0	0
	Don't know			11	2	0	0	0	0	0	0
What mother usually does with child.	**Plays with him**	ns	ns	78	67	60	77	80	81	83	82
	Reads to him	ns	ns	56	60	57	61	60	74	75	74
	Housework	ns	ns	67	78	77	77	90	88	77	79
	Watches TV	ns	ns	11	13	9	23	40	19	15	21
	Watches TV with him	ns	ns	89	89	68	74	80	91	90	91
	Reads by herself	ns	ns	44	16	17	19	30	37	17	24
How often child is read to.	**Once a day**	(.05)	ns	22	18	30	23	20	26	15	18
	Several a week			22	40	43	45	30	40	50	47
	Once a week or less			11	27	26	32	50	23	33	29
	Never			0	4	2	0	0	5	0	0
	Don't know			44	11	0	0	0	7	2	6
Do most children have to be forced to learn?	**Almost all the time**	ns	ns	0	4	2	3	0	0	2	0
	Most of the time			11	18	9	6	10	7	8	6
	Sometimes			56	62	64	77	80	70	58	65
	Never			22	13	23	13	10	21	33	29
Does your child have to be forced to learn?	**Almost all the time**		ns		**			0	0	0	0
	Most of the time							10	2	8	6
	Sometimes							80	60	46	53
	Never							10	37	46	41

ns = not statistically significant.
Probabilities in parenthesis should be interpreted with caution since they were computed on small expected cell frequencies.

* **Responses do not always total 100% because of some incomplete questionnaires.**

** **Question not asked in this questionnaire.**

Selected Parent Questionnaire Items for Disadvantaged, At-School, Encouraged Children

(by quartiles)

		P		Pretest Questionnaire				Posttest Questionnaire			
		Pre	Post	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Hours child watched TV yesterday.	6 or more	ns	ns	0%	2%	0%	0%	0%	7%	4%	6%
	4 or 5			11	16	19	3	30	12	13	9
	2 or 3			22	40	22	55	50	56	40	59
	Less than 2			56	42	57	42	20	26	38	26
Does child ever watch local ETV?	Yes	(.01)	(.02)	11	27	60	61	60	84	88	97
Mother watches Sesame Street with child.	Almost always		ns		**			10	14	12	18
	Usually							0	2	10	15
	Sometimes							40	47	67	56
	Hardly ever							30	33	12	12
	No Sesame Street							20	5	0	0
Mother and child talk about Sesame Street.	Almost always		ns		**			0	9	12	15
	Usually							0	9	12	18
	Sometimes							40	42	56	44
	Hardly ever							0	16	10	6
	No Sesame Street							20	23	0	18
Child plays games based on Sesame Street.	Almost always		ns		**			0	9	12	15
	Usually							0	9	12	18
	Sometimes							40	42	56	44
	Hardly ever							0	16	10	6
	Don't know							40	23	12	18
	No Sesame Street							20	0	0	0
How helpful is Sesame Street for your child?	Not helpful		(.01)		**			0	0	0	0
	Somewhat							30	21	12	0
	Very							30	70	87	100
	Don't know							20	9	2	0
	No Sesame Street							20	0	0	0

Selected Parent Questionnaire Items for Disadvantaged, At-School, Encouraged Children

(by quartiles)

		P		Pretest Questionnaire				Posttest Questionnaire			
		Pre	Post	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Kind of TV on which child watches Sesame Street.	Black & white		ns		**			50%	77%	81%	71%
	Color							30	19	12	21
	No Sesame Street							20	5	8	9
Employment of male head of household.	35 hours a week or more	ns		22%	53	57%	55%		**		
	10-35 hours			11	0	2	0				
	Less than 10 hours			0	2	2	3				
	Other			67	44	38	42				
Number of people living in child's home.	2	ns		22	4	9	3		**		
	3-4			44	42	34	48				
	5-6			11	27	40	35				
	7-8			22	11	13	10				
	Over 8			0	13	4	3				
Number of rooms in house.	1-2	ns		0	0	6	6		**		
	3-4			56	44	43	26				
	5-6			44	38	43	58				
	7-8			0	13	9	10				
	Over 8			0	0	0	0				

Parent Questionnaire Scales for All Disadvantaged, At-School, Not-Encouraged Children
(by quartiles)

	Maximum Possible Score	Total N= 127		Q1 N= 65		Q2 N= 24		Q3 N= 18		Q4 N= 20		P
		Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	
arents'Expectation												
Pre	50	35.6	8.5	34.3	10.6	36.6	4.9	36.3	7.0	38.0	4.4	.302
Post	50	37.3	5.4	37.6	6.1	36.3	5.0	37.6	4.1	37.6	4.4	.756
hild Affluence												
Pre	6	3.3	1.7	2.9	1.9	3.9	1.3	4.1	1.1	3.5	1.3	.016
Post	6	3.8	1.4	3.5	1.6	4.3	1.1	4.2	1.0	4.1	1.0	.044
hild Educational ses												
Pre	21	3.9		3.6		4.3		3.6		4.6		
Post	21	4.3		4.2		4.3		4.0		4.7		
arents' Affluence	14	7.7	2.5	7.1	2.8	7.9	2.3	8.9	1.6	8.5	1.7	.022
ean Years of arents' ducation	16	10.4	2.6	10.0	3.2	11.0	1.7	10.8	2.0	10.8	1.9	.336

Selected Parent Questionnaire Items for Disadvantaged At-School, Not-Encouraged Children

(by quartiles)

		P		Pretest Questionnaire*				Posttest Questionnaire*			
		Pre	Post	Q1 N=75	Q2 N=26	Q3 N=20	Q4 N=22	Q1 N=68	Q2 N=27	Q3 N=21	Q4 N=25
How often child uses art things at home.	Once a day	ns	ns	41%	31%	35%	41%	34%	41%	19%	24%
	Several a week			37	58	60	45	51	48	71	68
	Once a week or less			11	12	5	5	13	7	9	8
	Never			0	0	0	9	1	0	0	0
	Don't know			10	0	0	0	0	4	0	0
What mother usually does with child.	Plays with him	ns	ns	71	46	70	73	76	81	95	76
	Reads to him	ns	.05	53	35	70	59	56	59	90	76
	Housework	ns	ns	73	81	70	72	63	78	86	80
	Watches TV	ns	ns	20	8	15	18	26	19	24	12
	Watches TV with him	ns	ns	76	77	65	77	87	96	81	96
	Reads by herself	ns	ns	16	15	10	14	22	33	29	36
How often child is read to.	Once a day	ns	ns	16	31	15	9	16	22	10	20
	Several a week			41	23	55	45	38	33	38	32
	Once a week or less			20	35	25	36	32	41	48	48
	Never			9	4	0	5	9	0	0	0
	Don't know			13	8	5	5	4	4	5	0
Do most children have to be forced to learn?	Almost all the time	ns	ns	5	8	5	0	4	7	5	0
	Most of the time			12	15	5	5	12	4	5	12
	Sometimes			53	62	65	73	69	70	62	68
	Never			24	12	15	23	15	19	29	20
Does your child have to be forced to learn?	Almost all the time		ns	**				4	0	0	0
	Most of the time							4	15	0	4
	Sometimes							57	33	62	56
	Never							34	52	38	40

ns = not statistically significant.

Probabilities in parenthesis should be interpreted with caution since they were computed on small expected cell frequencies.

*Responses do not always total 100% because of some incomplete questionnaires.

**Question not asked in this questionnaire.

Selected Parent Questionnaire Items for Disadvantaged At-School, Not-Encouraged Children

(by quartiles)

		P		Pretest Questionnaire				Posttest Questionnaire			
		Pre	Post	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Hours child watched TV yesterday.	6 or more	ns	ns	4%	4%	5%	9%	4%	4%	0%	0%
	4 or 5			16	15	10	18	16	22	5	12
	2 or 3			32	35	40	41	37	37	62	40
	Less than 2			43	46	40	32	43	37	33	44
Does child ever watch local ETV?	Yes	.02	(.001)	28	27	60	55	44	85	100	100
Mother watches Sesame Street with child.	Almost always		(.01)	**				1	22	5	36
	Usually							7	15	5	12
	Sometimes							21	48	90	40
	Hardly ever							9	11	0	12
	No Sesame Street							62	4	0	0
Mother and child talk about Sesame Street.	Almost always		(.05)	**				3	19	0	28
	Usually							4	22	24	24
	Sometimes							19	41	62	48
	Hardly ever							12	15	14	0
	No Sesame Street							62	4	0	0
Child plays games based on Sesame Street.	Almost always		ns	**				1	7	0	12
	Usually							1	7	10	8
	Sometimes							18	37	52	56
	Hardly ever							6	19	24	12
	Don't know							11	26	14	12
	No Sesame Street							62	0	0	0
How helpful is Sesame Street for your child?	Not helpful		ns	**				3	4	0	0
	Somewhat							9	11	10	12
	Very							26	67	81	84
	Don't know							3	19	10	4
	No Sesame Street							62	0	0	0

Selected Parent Questionnaire Items for Disadvantaged At-School, Not-Encouraged Children

(by quartiles)

		P		Pretest Questionnaire				Posttest Questionnaire			
		Pre	Post	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Kind of TV on which child watches Sesame Street.	Black & white		(.01)	**				34%	96%	81%	60%
	Color							4	4	10	32
	No Sesame Street							62	0	0	0
Employment of male head of household.	35 hours a week or more	ns		37%	31%	45%	45%	**			
	10-35 hours			4	4	0	0				
	Less than 10 hours			1	0	0	0				
	Other			57	65	55	55				
Number of people living in child's home.	2	ns		5	4	10	14	**			
	3-4			25	42	35	36				
	5-6			27	15	35	32				
	7-8			25	19	25	14				
	Over 8			12	15	5	5				
Number of rooms in house.	1-2	ns		4	8	0	0	**			
	3-4			43	23	15	50				
	5-6			44	58	75	41				
	7-8			3	12	5	5				
	Over 8			0	0	5	0				

Appendix K

SPANISH-SPEAKING QUESTIONNAIRE

Child's Name ______________________________

ID Number ________________________

City Number ________________

T/O ID Number ______________________

1. How much Spanish is spoken in the child's home? (Check one)

_____ 1. Spanish is spoken almost all of the time by people in the child's home

_____ 2. Spanish is spoken about half of the time by people in the child's home

_____ 3. Spanish is spoken very little by the people in the child's home

2. How much Spanish does the child speak at home?

_____ 1. He speaks Spanish almost all of the time at home

_____ 2. He speaks Spanish about half of the time at home.

_____ 3. He speaks almost no Spanish at home.

3. How much English does the child speak?

_____ 1. He speaks very little English.

_____ 2. He speaks some English but seems more comfortable speaking Spanish.

_____ 3. He speaks a good deal of English and seems comfortable using it.

Appendix L

THE STUDY SITES - DISADVANTAGED AND ADVANTAGED

Scattered throughout the report are the terms "disadvantaged" and "advantaged". These terms are clearly subjective and cannot be defined with precision. This does not mean that the terms need necessarily be unclear -- merely that the boundaries for their application are not agreed upon. The term disadvantaged was applied in this study in terms of the following descriptions and comments, the children's pretest attainments, and the parent questionnaire data supplied in the report.

Disadvantaged children come from areas usually marked by low incomes, high unemployment, poor housing, insufficient health care, and educational retardation. In this study, the children termed "disadvantaged" came from such areas in four different sites.

Boston is divided into more than ten poverty areas by Action for Boston Community Development (ABCD), the community agency that is responsible for much of the disbursement of federal funds--such as for Head Start programs. Some of these areas from which this study obtained its sample are black ghettos (e.g., Roxbury), some contain predominantly white poor families of mainly Irish or Italian extraction (e.g., East Boston), and some are racially and ethnically integrated (e.g., Dorchester). The children live in areas that include public housing projects, old tenements, and multi-family dwellings. The unemployment rates in these areas are high and there are a considerable number of mothers on welfare.

In Durham, the physical conditions are different and the poverty, if anything, is more intense. The children in our sample live in ramshackle houses situated on dirt side-streets that run off from quite pleasant main roads. That is, in the tradition of southern towns, the children, most of whom were black, live nearby seemingly wealthy areas. Although there is plenty of open space (unlike Boston), there are no playground facilities, and when one drives down the dirt streets the typical sight is of many little children playing in dusty surroundings.

The area of Phoenix from which children came is literally on the wrong side of the tracks in the poverty-engulfed south side. As in Durham, children have plenty of open space. The children play in the sun-parched, grassless yards of the run-down houses or in the areas between the public housing projects where many of them live. As in Durham, there are large numbers of small, fundamentalist churches in the area, a lack of public transportation facilities, and a concentration of poverty program activities.

The fourth site where disadvantaged children were sampled was rural, northeastern California. If sprawling Phoenix is in contrast to the close-together housing of Boston, then this rural area of California is as different again. You can drive for hours between small towns and scarcely find a house.

The fifth study site was quite different from any of the disadvantaged sites. In northeastern, suburban Philadelphia the houses are well constructed, spacious, and set well apart from each other. The streets are pleasant and tree-lined. There is a well-to-do air that rises from the manicured lawns and the two car garages. And that is the area from which our advantaged children came.

As was stated at the beginning of these descriptions, "advantaged" and "disadvantaged" are subjective terms. But there can be no doubt from a visit to these sites, or, alternatively, from an inspection of the pretest scores of the children and of the parent questionnaire responses, that the terms are reasonably applied.

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